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World War II In Alaska: A Historic and Resources Management Plan

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WORLD WAR II IN ALASKA:
A HISTORIC AND RESOURCES MANAGEMENT PLAN



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1.0 INTRODUCTION

The role of Alaska in the conduct of World War II and the role of the War in the development of Alaska are not fully known or appreciated by the vast majority of Americans. Between 1940 and 1945 vast quantities of men and material were sent to what would later become the Forty-ninth state. When the War ended the greater portion of the military installations which had been constructed were abandoned.

In 1974 as part of the Civil Works Omnibus Bill (P.L. 93-251) Congress authorized the Corps of Engineers (COE) to make a study of plans "for the removal and disposal of debris and obsolete buildings remaining as a result of military construction in World War II" at a number of Alaskan locations. In late 1976 the Alaska District of the COE issued its study for debris removal and cleanup in the Aleutian Islands and on the Lower Alaska Peninsula (COE 1977). That study noted the potential historic value of much of the abandoned military property in the region. In September 1979, the Corps issued an associated Draft Environmental Impact Statement (DEIS). That document, in summarizing the adverse effects of a cleanup project states:

"The intent of the proposed action is to demolish, burn, and bury the physical remains of the Aleutian campaign. Yet what might be cleaned up represents a significant chapter in American, Alaskan, and Japanese military history which has received little systematic study or published historical documentation and which was in many ways a secret operation guarded from publicity during the war years. Thus, the obvious adverse impact on the existing World War II evidence would be the intentional destruction of the military historic record. However, the structures, artillery pieces, and smaller debris worthy of preservation are probably few compared to the total quantity of typical or standard material within the project area, and the preservation of unique examples of military architecture, armament, aircraft, vehicles, and even painted murals is an integral part of the proposed action. A major problem lies in the fact that the spatial distribution of structures and objects may provide more historical insight than the actual characteristics of the remains themselves, especially with regard to topographic contents where a battleground is involved or Japanese occupation occurred, as at Attu and Kiska. Furthermore, even if these wartime artifacts have no intrinsic value to the professional historian, the public appreciation of the conditions under which the two military forces lived and fought would be greatly enhanced by the original structures in their original positions, especially in the event of future National Historic Place (sic) or National Historic Landmark designation" (ACOE 1979:226-7).

A National Historic Landmark (NHL) theme study entitled World War II in the Pacific, which incorporated a number of Alaskan sites, was approved in October 1984, and subsequently extended to include additional sites. Earlier that year, Congress appropriated funds for cleanup work as part of the Defense Environmental Restoration Account - DERA. In August, 1984 as part of its historic preservation compliance obligations relating to DERA in Alaska the Corps of Engineers entered into a Programmatic Memorandum of Agreement (PMOA) with the Advisory Council on Historic Preservation, the Alaska State Historic Preservation Officer (SHPO), and the Alaska Region of the National Park Service (NPS). A stipulation of the PMOA was that a Comprehensive Study and Plan (CSP) for World War II remains in Alaska be prepared.

In October, 1984, the Corps of Engineers requested NPS to contract for the preparation of a CSP type document - and in March, 1985 the contract in the amount of \$242,973 was awarded to EnviroSphere Company. The following sections of this report, which can serve as the CSP, present the methods employed in, and results of, data collection (Section 3.0), data synthesis (Section 4.0), preservation management plan preparation (Section 5.0), and DERA mitigation plan preparation (Section 6.0). Some of these sections, and some of the appendices which follow the main body of the report, may be used by individuals who are not cultural resource specialists. For this reason they contain discussions of cultural resources preservation planning requirements and procedures, particularly those relating to the evaluation of "significance", that would not otherwise have been included.

Section 2.0, which follows, constitutes an historic overview of World War II and the Cold War period in Alaska. It was prepared using data collected throughout the course of the project as part of the data synthesis task. It is presented first here because it effectively "sets the stage" for understanding the whys and how of the entire project, and places subsequent sections of this report in proper perspective.

2.0 ALASKA IN WORLD WAR II - HISTORIC CONTEXT AND OVERVIEW

2.1 Introduction

In September, 1939, World War II began in Europe. Its effects were to have far-reaching consequences for Alaska's role as part of the United States and ultimately alter its position in the world. The ensuing situation was far different from that of World War I which had resulted in the draining of population and resources from the Territory. Alaskan development, which had surged during the period of the Gold Rush (1897-1901), ebbed as population flowed out as a result of the war.

Debate still exists over the significance of Alaska in military terms during the World War II era, as it did at the time. In 1935, retired Brigadier General William L. "Billy" Mitchell, the outspoken prophet of air power who had served in the Signal Corps in Alaska, testified before the House Military Affairs Committee regarding the strategic value of Alaska. "Alaska is the most central place in the world for aircraft and that is true either of Europe, Asia or North America. I believe in the future, he who holds Alaska will hold the world, and I think it is the most important strategic place in the world" (quoted in Cohen 1981:2).

Mitchell added that Japan represented the primary threat to the US in the Pacific and predicted that Imperial forces would attack Alaska rather than other potential targets of US concern. Furthermore, he stated that Alaska should serve as the keystone of US Pacific defense and offense, the jumping-off place for any campaign against Japan (Garfield 1969:54; Cohen 1981:2). General George C. Marshall, Army Chief of Staff at the outbreak of World War II, however, believed that while Alaska appeared strategically important on the map, the problems of isolation and weather, which made it a logistic nightmare effectively eliminated it as an area of major military operations for both US and enemy forces (Morton 1962).

Mainstream historians have tended to follow the latter view (Morton 1962; Toland 1970; Spector 1985). Admiral Morison (1951:2) stated bluntly that "none of the operations accomplished anything of great importance or had any appreciable effect on the outcome of the war....Both sides would have done well to have left the Aleutians to the Aleuts for the course of the war." This low opinion of the value of Alaska in general for military operations coincides with that generally expressed by the troops who served in the area, experiencing the hardships of the Territory and the low priority of a peripheral sector. Popular historians such as Garfield (1969) and Cohen (1981), have, however, argued for the importance of Alaska in World War II and have listed an impressive series of firsts, bigests, mosts and other accomplishments to Alaskan operations during the war.

While the significance of Alaska to the war in the Pacific may have been relatively minor, the importance of the war to Alaska cannot be over-emphasized. During World War II, tens of thousands of American military personnel and civilian workers flocked to Alaska. Between 1941 and 1945, the federal government spent over \$1.25 billion in Alaska. In effect, World War II transformed Alaska from an ignored, underdeveloped, isolated region into the modern state and segment of an international defense network that it is today.

2.2 The Pre-World War II Period (1912-1939)

The consensus view among historians holds that since the US purchase of Alaska from Czarist Russia in 1867, neglect on the part of the federal government has characterized the relationship between Alaska and the rest of the nation (Gruening 1954; Hulley 1953). The argument contends that only when compelled by economic advantage or military necessity has Washington taken any active interest in the Far North. There are several reasons for such an outlook. Alaska's frontier was unique in the history of US expansion in that it had to be settled largely by sea rather than by land routes. Also in contrast to the majority of the US, settlers predominantly came to exploit natural resources on a temporary basis rather than to develop a permanent, self-supporting base. Profits from Alaska's resources flowed to Seattle, San Francisco, and other non-contiguous areas, limiting local investment. As Hinckley (1972) argues, Alaska's isolation prevented effective exploitation and incorporation, especially when viewed in the context of the focus on developing contiguous areas within the continental US. In fact, it may be argued that Russia elected to sell to the US with the expectation that a weak buyer, such as the US, would not develop the area and thus become a threat, as might happen if a stronger power, such as Britain, were to become established there.

The Russian presence since European discovery by Vitus Bering in 1741 had been limited, restricted generally to coastal trading. The US Navy had made clandestine surveys of Alaskan and Aleutian waters between 1852 and 1863, with the resulting charts providing the only documentation available for some areas until World War II (Morgan 1980:106), but overall US interest was minor. The US military presence began formally with the purchase and the transfer of sovereignty at Sitka in 1867. Two Army companies were assigned to take possession and patrol the 586,400 square miles of the purchase. Unlike the precedent established in the continental US, Alaska was organized as a Military District and a Customs District, rather than as a Territory. In the absence of legislative authority and without clear legal jurisdiction, the Army provided de facto the only semblance of civil authority. The Army withdrew from Alaska in 1877, turning all governmental functions over to the Treasury Department. Following incidents involving alcohol-related crimes and Indian unrest, the Navy assumed jurisdiction from the Treasury Department in 1879, under the plausible theory that since settlement was spread over large distances and essentially coastal in nature, a mobile, sea-going police force could maintain order better than a series of undermanned, low-mobility fixed land stations. Naval authority continued until the passage of the Organic Act of 1884, which upgraded Alaska to a Civil and Judicial District but still denied it status as a Territory. Alaska lacked a legislature, a congressional delegate or land laws, but the military was relieved of its direct responsibilities for civil functions.

During the 1870s-1890s, the Army and Navy sponsored a series of small-scale exploration expeditions throughout Alaska, but maintained no formal presence except for a small Marine detachment at Sitka. The Army returned to Alaska in 1897 to enforce a border dispute with Canada, and stayed to maintain order during the Gold Rush years (1897-1901). A series of small, often impermanent, posts was established by the Army during this period to monitor routes into the mining districts: Forts St. Michael and William H. Seward and a garrison at Skagway (1897), garrisons at Rampart and Circle City (1898), and Forts Gibbon, Egbert, Davis, and Liscum (1899). The Army posts had no national

security or strategic mission (USRAL 1965:26f). The Navy, which as early as 1892 had joined with the Coast Guard to patrol the sealing grounds around the Pribilofs (Morgan 1980:110), took a somewhat more long-term strategic view in building a coaling station at Sitka in 1899 to support its Northern Pacific activities. Both this facility and the Marine detachment there were abandoned in 1912 (Hanable and Ponko 1983:5).

After the Gold Rush, military exploration continued and other functions took on a greater importance. The Army built a trail from Valdez to the upper Yukon Valley in 1901. The semi-military Alaska Road Commission was formed in 1905, and its first task was to improve this trail into a horse-drawn sled and wagon road (the Richardson Highway), which was accomplished between 1907 and 1910. Of even greater significance were the communications projects originally designed to link the far-flung military posts together and later to provide communications with the rest of the US. Authorized in 1900, intra-state telegraphic communication was achieved by 1903, with undersea cable connections being completed to Seattle by 1904. The Signal Corps, which was to form the nucleus of the military presence in Alaska prior to World War II, operated the Washington-Alaska Military Cable and Telegraph System (WAMCATS) which handled military and civilian messages and would later evolve into the Alaska Communications System (ACS). The distances and the harsh weather involved made maintenance of land lines infeasible, and advances in radio technology fortunately provided an alternative. A military communications network was proposed in 1907, with the Army establishing stations at Forts Gibbon, Egbert and Davis and at Fairbanks and Circle in 1908. The Navy had radio and weather stations at Sitka (1907) and Cordova (1908) and, by 1909, there were commercial stations at Katalla, Juneau and Ketchikan operated by United Wireless. The Army system was expanded with stations at Wrangell, Petersburg, and Kotlik (1910) and at Nulato (1912), with the Navy adding facilities at Kodiak (Woody Island), Dutch Harbor and St. Paul (1911) and at Unalga (1912) (USRAL 1965:59; Hanable and Ponko 1983).

Alaska finally achieved territorial status with the second Organic Act of 1912, however the restrictive terms of the act denied the legislature the power to regulate natural resource use, pass land laws, levy taxes and issue bonds, causing numerous headaches for civil authorities (Gruening 1954; Hulley 1953). The act did create the Alaska Railroad Commission to investigate the building of a railroad to the interior. Construction began in 1915, and although the 470 mile main line was not completed until 1923, the road represented the first federally-funded, owned and operated railroad in the US, showed a commitment to Alaska on the part of the federal government and opened the interior via relatively efficient transportation (Fitch 1967).

In 1912, exclusive of communications facilities, the Army maintained bases at Fort Davis (Nome), Fort St. Michael (Norton Sound/Yukon Delta), Fort Gibbon (Tanana), Fort Egbert (Eagle), Fort Liscum (Valdez) and Fort William H. Seward (later Chilkoot Barracks, at Haines). In 1915, the Army had an authorized strength of a regiment (1900 men) in Alaska, although actual strength was only 958, consisting mainly of Signal Corps technicians who operated 53 offices and 10 radio stations (USRAL 1965:59). In 1912, the Navy closed its only noncommunications facility at Sitka. Previously, the Navy had surveyed the Aleutians for potential operating base sites and in 1902 had recommended Dutch

Harbor as a coaling station. This recommendation was changed to favor a base at Kiska in 1903, with lands being withdrawn by Executive Order in 1904. However, military thinking changed, and the Aleutian base was considered too limited to fit strategic needs. The plan for a facility at Kiska was withdrawn in 1915 (Hanable and Ponko 1983:269f). Morgan (1980:130) reports that naval construction was actually begun at Kiska in 1916, but that it did not proceed beyond driving pilings for a dock.

For a number of reasons, World War I drained population and resources from Alaska. Prior to US entry into the war, numerous Alaskans enlisted in the Canadian armed forces, and after US involvement, others were drafted. While few made it overseas, many left the Territory and failed to return (Hulley 1953;USRA¹ 1965). There were few military projects in Alaska during the war, and most Army activity consisted of guarding the newly begun railroad and communications facilities (TIPS 1949), while the Navy's role involved patrolling fishing grounds and suppressing labor unrest in the canneries (Hanable 1983:6). The Navy did initiate coal mining tests from 1918 through 1922 in the Chickaloon area to investigate the viability of producing a fuel reserve, but the deposits proved to be of insufficient quality and quantity to justify development. The shifts in technology from coal to oil for ships led to the designation by the Navy of the Petroleum Reserve No. 4 in the Point Barrow area in 1923, but development did not begin until 1941 (Hanable 1983:6). The Navy also maintained unused reserve lands at Biorka, Cold Bay, Cordova, Hawkins Island, Juneau, Kiska, Portage Bay, Port Graham, Wide Bay and Yakutat (Hanable and Ponko 1983:299).

The economic boom set off by wartime demand hurt Alaska as many people moved out of state seeking higher-paying employment. While war-related prosperity failed to reach Alaska, the Territory's economy was hampered by increased costs and lowered availability of labor, supplies and equipment due to surging demand elsewhere. While certain large operations, notably copper and coal mining and fish canning, experienced major growth, the effect was highly localized and many small firms were forced out of business. Despite the economic benefits from gains in natural resource exploitation and the stimulation offered by the construction of the railroad and the development of some 535 miles of vehicular roads, world market price slumps in the years after the "Great War" led even more people to leave the Territory in search of jobs (Gruening 1954; Hulley 1953).

This exodus was reflected in the military presence as well. The Army closed Fort Davis in 1921 and abandoned Forts Egbert, St. Michael, Gibbon and Liscum in 1925, leaving Fort William H. Seward as the only active military facility in the Territory until 1940. In 1927, there were a total of only 255 Army personnel in Alaska. In 1929, Congress appropriated funds to remove military cemeteries from Alaska, indicating a lack of interest in any long-term presence there (USRA¹ 1965:53). The Navy began to retrench as well; it had expanded its communications presence during World War I by building the Cordova radio stations at Hanscom and Eyak and the one at Seward as well as confiscating the stations of the Marconi Wireless Telegraph Company of America at Juneau and Ketchikan. The Juneau and Ketchikan stations were transferred to the Army in 1924, followed by the Seward station in 1927. The Cordova area stations were closed in 1930 and 1933, and the Kodiak and Sitka stations

in 1931. The Navy took possession of the Seward station again in 1932, but it burned in 1935 and was not reestablished until World War II. The St. Paul station was turned over to the Bureau of Fisheries in 1937. The only new construction by the Navy consisted of the Cape Hinchinbrook and Soapstone Point direction finding/radiocompass navigation stations in the Gulf of Alaska, operated from 1921 through 1937 and 1938, respectively. In 1940, the Navy radio station at Dutch Harbor was the only active Navy presence in Alaska (Hanable and Ponko 1983).

One area which was to have a major impact in Alaska was the development of air travel. The first flight in the Territory was in 1913, and the Signal Corps had an air wing authorized beginning in 1914, but development was slow. To promote military aviation after World War I, the Army sponsored a number of flights to Alaska. In 1920, the Black Wolf Squadron of four DeHavilland DH-4 biplanes flew from New York to Nome and back. In 1924, four two-winged Douglas World Cruisers flew from Seattle along the Alaskan coast and across the Aleutians to the Kuriles then across southern Asia in an around-the-world flight; one ran into a mountainside at Port Moller, becoming the first military aircraft to crash in Alaska. In 1929, Captain Ross G. Hoyt flew a solo mission in a modified Curtiss P-1C Hawk biplane fighter, duplicating the round trip route of the Black Wolf Squadron. The flight ended with a non-fatal crash in Canada on the return leg. Another demonstration of note was the 1934 flight of a squadron of ten Martin B-10 bombers led by Lieutenant Colonel Henry "Hap" Arnold, who would lead the Army Air Corps in World War II, from Washington, D.C. to Fairbanks and back. All of these flights were staged using civilian and/or ad hoc facilities, as there were no military airfields in the Territory (Cloe with Monaghan 1984:2f). Civilian aviation caught on more rapidly, with the first commercial aviation venture dating to 1922. Airmail contract runs were being flown by 1924, but civil aviation was also hampered by the lack of facilities. Despite these problems, Alaskans took to aviation to such an extent that by 1938, Alaskan planes carried more cargo than all planes in the rest of the US (Draft History 1944:386).

While Alaska struggled along during the 1920s, the 1930s and the Depression paradoxically led to a minor boom in the North. Alaska benefitted from immigration as unemployment rose in the US, and the increase in the price of gold and the impetus this gave to mining in general provided jobs as did federal relief projects. The Federal Emergency Relief Administration (FERA) sponsored the Matanuska Colonization Project, which for the first time established a permanent, stable agricultural community in Alaska. The Public Works Administration (PWA) constructed harbor facilities, the Civilian Conservation Corps (CCC) improved infrastructure in national forests, the Federal Housing Authority (FHA) built other structures and the Works Progress Administration (WPA) ran various cultural projects. The negative aspects of the New Deal in Alaska involved an actual cutting back of road building and maintenance programs, while aviation-related projects never got off the ground even though authorized by the Air Commerce Act of 1926.

Against the backdrop of the Depression, non-voting Territorial Delegate, Anthony J. Dimond, supported legislation in 1934 to construct airfields in Alaska. This attempt coincided with the report of the Drum Board (under Deputy Chief of Staff Major General Hugh A. Drum), which recommended air bases for Alaska and the report of the Baker Board (headed by former Secretary of

War Newton D. Baker) which specifically called for cold weather testing, both in 1934. In 1935, the Wilcox National Air Defense Act passed; it called for construction of air bases, but lacked a provision for funding. Given scarce resources, the Depression, competing military needs and the fact that Alaska could muster very little political clout, no funding was found for Alaskan projects. It was not until 1937 that a site for a facility was selected at Fairbanks and funding and construction were delayed even longer (Cloe with Monaghan 1984:20f).

Renewed isolationism following World War I had led to a slashing of military budgets and a decline in facilities, equipment and manpower. The closings of bases in Alaska was symptomatic of the deeper problems nationwide in a military establishment where promotion was slow and the atmosphere clubby and stagnant. In 1941, the four top field commanders of the Army, including Lieutenant General John L. DeWitt who was responsible for Alaska, were veterans of the Spanish-American War. Prerogatives were jealously guarded, and intra- and inter-service rivalries were often the most serious concerns of the leadership. The Navy, under the influence of nineteenth century theoretician Admiral Alfred Thayer Mahan, was dedicated to large battleships, to the exclusion of other weapons. Neither service took air power seriously from the 1910s into the 1930s, although proselytizing by Billy Mitchell of the Army and Rear Admiral William A. Moffett of the Navy finally resulted in a reluctant support of military aviation. Traditional military thinking within the Army stated that the Navy existed to protect the Army while en route to engage the enemy in continental land wars, while that within the Navy held that the Army existed to defend Navy shore installations with capital ships providing the first line of defense and the real projection of power (Spector 1985).

The Joint Army/Navy Planning Board, charged with developing a plan for a possible war in the Pacific, was established in 1903. The Joint Board's first rudimentary plan was completed in 1907. Further planning led to the first War Plan Orange (plans were devised for a single nation-state enemy and color-coded) in 1924. This plan for war with Japan called for the Army to hold the Philippines while the Navy steamed from the West Coast of the US to engage the Japanese fleet in a decisive battle. Numerous revisions of War Plan Orange followed with the concept of a defensive triangle with Hawaii at the center and Alaska and Panama at the extremes forming a defensive perimeter being introduced in 1935. Alaska's strategic flank position developed during the period leading up to World War II. However, the Washington Naval Armaments Limitation Treaty (or Five-Power Treaty) of 1922, in addition to limiting the naval tonnage of the US, Britain and Japan, prohibited the US from fortifying bases in the Aleutians. Between the provisions of the treaty and budgetary constraints, Alaska was not fortified (Spector 1985:57f; Cloe with Monaghan 1984:11). By 1938, the military had invested around \$225 million in facilities in Hawaii but only \$1.5 million for work in Alaska, most of that for civilian relief projects (Conn et al. 1964:153; Cloe with Monaghan 1984:11). As Conn drily put it, "Army planners found it hard to shake their long held conviction that Alaska was not a critical area" (Conn et al. 1964:225).

Japan had developed a war plan for a conflict with the US as early as 1907, when tensions over US treatment of Japanese immigrants and the feeling that US mediation had deprived Japan of victories won on the battlefield in the Russo-Japanese War (1904-1905) led to consideration of the US as a potential enemy (Spector 1985:44). The Japanese plan was remarkably like that of the 1907 War Plan Orange: it involved luring the US fleet out to do battle in the area of the Philippines, relying on superior Japanese maneuver, ability, strategy, and psychological toughness to carry the day. However, the US was a minor consideration of the Japanese, who saw China and Russia as the main threats. In fact, the Japanese military establishment was primarily focused on cold weather warfare, ill-prepared for a tropical war and woefully ignorant of the potential US enemy (Coox and Hayashi 1959:26), though Japanese forces rapidly developed expertise in tropical warfare.

Suffering the dislocations of rapid modernization and population growth, Japan was hard hit by the worldwide economic collapse in the early 1930s. Following what was seen as a surrender of national sovereignty at the London Naval Conference in 1930, which led to more limitations on naval construction, hardliners gained greater ascendancy in the factionalized government and maneuvered Japan into an invasion of Manchuria as a means of expanding out of the Depression (Toland 1970). In 1934, Japan unilaterally withdrew from the 1922 Five-Power Treaty two years before it was scheduled to expire. By 1936, the military had acquired veto power over civilian ministry-level policy decisions and issued a paper entitled "Fundamental Principles of National Policy," calling for expansion into Asia and the Pacific, which would bring Japan into conflict with the USSR, China, Britain and ultimately the US (Spector 1985:42). In 1937, Japan invaded China. Britain's Far Eastern colonial interests led her to protest, and the US supported the British position.

The feeling is often expressed that the US in general, and the Navy in particular, ignored the Japanese threat even after the abrogation of the Five-Power Treaty. This is mainly due to the fact that the once-proposed base at Kiska was not revived. Given the political situation and budgetary realities, it is difficult to see how it could have been at the time. Actually, the Navy had an awareness of the potential problem posed by the need to defend the Northern Pacific. Beginning in 1922, it had begun studies on basing, with reconnaissance in the Gulf of Alaska area being undertaken from 1933 to 1937 and Kodiak established as the site for a base in 1938 (Kodiak History 1944:1-2). Between 1933 and 1935, the Navy conducted aerial reconnaissance of the Aleutians to survey potential base sites, Unalaska and Adak being considered the best locations. A weather station was also established at Kiska in 1934-1935 (Morgan 1980:42,130). The 1935 Fleet Problem XVI was held in Aleutian waters. It was shadowed by a Japanese "trawler" escort, and residents of various islands reported the presence of an unusual number of Japanese fishing boats and "scientific" and cartographic expeditions. The State Department was informed, but it was decided that no protest should be filed to avoid creating an incident with Japan (Morgan 1980:130-132).

Increasing tensions with Japan during the 1930s and the development of new military technology, especially aircraft, brought Alaska to the attention of planners. There was concern that long-range bombers could reach Alaska and, from bases in Alaska, the West Coast. The consensus was that the key to Alaska's defense lay in "denying to the enemy actual or potential bases from which air or naval operations could be conducted" (Conn et al. 1964:227). Still using War Plan Orange as the basis for decisions, the Navy convened the Hepburn Board (headed by Admiral Arthur J. Hepburn) to study Naval aviation and readiness. In 1938, the Hepburn Report recommended that the Navy expand the seaplane base designated at Sitka in 1937, and build air facilities at Kodiak and Dutch Harbor as well. These recommendations made it through Congress, and appropriations were voted for FY 1940. The Navy received priority since its mobility and ability to operate in Alaska was considered superior to that of the Army, though the fact that Franklin Roosevelt as a former Assistant Secretary of the Navy had a certain bias towards the Navy may have influenced the acceptance of the Navy's viewpoint. The Hepburn Report's conclusions were also supported by Major General Henry "Hap" Arnold, Chief of the Army Air Corps and leader of the Alaska Flight of 1934, who insisted that Army bases were necessary to protect the naval facilities, though Arnold's espousal may have represented a ploy to both assure a role for the Army and to gain recognition for his Air Corps.

Traditional military planning had been confined to calculations of how to meet an attack on American territory by individual nations, but by 1938 the need for a new hemisphere-wide defense was clear. The Joint Army/Navy Board undertook to reassess defense plans under the "most unfavorable foreseeable developments in World Affairs" (Conn and Fairchild 1960:8). The result was the series of Rainbow Plans, of which the final iteration was R5. The 1939 plan mandated the development of Alaskan defenses. In any Pacific engagement, the Navy would be expected to play the primary role both offensively and defensively at least in the early stages, as the Army lacked troops on the ground and the means to project power in that theater. Tactically, the plan declared that the Army would be given responsibility, along with the Marines (who were to play a minor role in Alaska), for the defense of Navy shore installations. The two services agreed that duplication of facilities should be avoided and that most could be shared. It was further agreed that Army facilities at such bases would be constructed through existing Navy contracts with civilian firms.

When war broke out in Europe in September, 1939, there were about 200 Signal Corps personnel and an additional 300 Army troops at Chilkoot Barracks plus a handful of Navy personnel overseeing various construction projects at Dutch Harbor and other locations. The 286 enlisted men and 11 officers at Chilkoot were armed with 1903 Springfield rifles and used their "Russian cannon, the only artillery piece in Alaska, as a flowerpot" (Garfield 1969:46). There were no roads into the base and the only transportation link with the outside was a tugboat unable to make headway against a 15 knot wind (USRA 1965:84). As Territorial Governor Ernest Gruening observed with considerable overstatement, "a handful of enemy parachutists could capture Alaska overnight" (Gruening 1954:212).

2.3 World War II In Alaska (1939-1946)

2.3.1 Buildup (1939-1942)

In August, 1939, Germany and the USSR signed a nonaggression pact which led to the partition of Poland after the German attack in September. In December, 1939, there were reports of a Soviet military buildup in Siberia, leading to strident calls for the defense of Alaska. However, it was the end of the "phony war" in Europe and the fall of the Low Countries and France in spring, 1940, which finally galvanized the country.

In June, 1940, Brigadier General George V. Strong of the Army's War Plans Division argued that the US should look to hemispheric defense and take an essentially defensive posture in the Pacific. This argument was reiterated in November by Admiral Harold Stark, Chief of Naval Operations, in a document which became known as "Plan Dog," which was to set broad Allied strategy for the war: an active, offensive stance in the primary European sector and a reactive, defensive stance in the Pacific (Spector 1985:61, 65-66). As regards Alaska, by early 1940, "the War Department had agreed on a long range program having five major objectives: to augment the Alaska garrison; to establish a major base for Army operations near Anchorage; to develop a network of air bases and operating fields within Alaska; to garrison the airfields with combat forces; and to provide troops to protect the naval installations at Sitka, Kodiak, and Dutch Harbor" (Conn et al. 1964:224).

The defense of the Atlantic and Pacific coasts of the US and of the Western Hemisphere in general became a more pressing concern, as did the issue of Canada's participation. Canada had declared war in support of Britain and had only limited military supplies available due to massive shipments of its reserves to Europe. Rainbow Plan 4 (R4) had recognized Canada as an ally and recommended cooperations. The framework for this cooperation was found in the Joint Basic Defense Plan of 1940, and the more definitive Joint Canadian-United States Pacific Coastal Frontier Defense Plan No. 2 (or ABC-Pacific-22) of 1941. Joint Task Four, the defense of Alaska, gave the Canadian Army no specific responsibilities and assigned the Royal Canadian Air Force (RCAF) a secondary, supporting role. The mainstay of cooperation was the exchange of information and intelligence, the integration of communications and air warning systems, and the coordination of harbor and coast defenses. The most important collaboration lay in the development of the Northwest Staging Route - a string of airfields between Great Falls, MT, and Fairbanks, AK - for the support of air traffic to and from Alaska. This interior route, which would later be augmented by the Alaska Highway (generally known as the ALCAN Highway) land route, was considered important as an alternative supply link should enemy surface and/or submarine activity interdict ship traffic along the coast, the Inside Passage, or in the Gulf of Alaska.

The slowness of the buildup reflected the hesitancy with which the nation and its leadership moved from a position of neutral isolationism to one of belligerency from the mid-1930s to 1941. The Spanish Civil War (1936-1939) and the Sino-Japanese War from 1937 on, plus such events as the sinking of the US gunboat Panay in 1937, and the annexation of Austria, the Munich Conference and the cession of the Sudetenland in 1938, not to mention the outbreak of hostilities in Europe in 1939, pointed to an impending conflict of supralocal scope and intensity, but the US remained immersed in domestic concerns. Only

gradually did public sentiment and Executive and Congressional interest shift towards the exercise of an international leadership role. Roosevelt's reelection to an unprecedented third term by a wide margin gave him the leeway necessary to change course from recovery and restructuring at home to a foreign policy focus. The Strong Memo prior to the election had little effect, but the Stark Memo (Plan Dog) was readily embraced after it. Roosevelt had already appointed two prominent Republicans and internationalists, Henry L. Stimson and Frank Knox, as Secretaries of War and the Navy to underscore national unity and a new outward-looking emphasis. Policy goals were to oppose aggression, defend the US and develop the capability to actively enter the fighting if necessary (Leuchtenburg 1963). The necessity appeared more likely as, following successes in Europe, Germany, Italy and Japan signed a mutual-assistance pact in September, 1940, forming the Axis Alliance. The US enacted the first draft law since World War I.

Before the Alaska garrison could be augmented according to plan, facilities would have to be constructed, largely from scratch. Following the uphill battle waged by Alaskans and defense advocates, the first modern military construction in the Territory began in 1939. The FY 1940 budget contained \$4 million for a military cold weather testing facility to be built at Fairbanks plus about \$15 million for the recommended naval construction at Sitka, Kodiak and Dutch Harbor. With the beginning of these projects, defense spending became the mainstay of Alaska's economy, a situation which would continue for the next 20 years (Cloe with Monaghan 1984:27).

The facility at Fairbanks, to be known as Ladd Field after Army aviator Major Arthur K. Ladd, had been in the works since 1936, when the site was selected; it was set aside by executive order in 1937 (Cloe with Monaghan 1984:21). The official Draft History (1944:2) and Thompson (1984a:4) state that surveying and clearing began in 1938, which would make it the first actual buildup-related construction in Alaska, though serious construction is generally considered to have begun in 1939, after the appropriation of funds. The facility was not finally authorized until February, 1940. Ladd Field was dedicated in September, 1940, after around-the-clock shift work over the winter using Quartermaster Corps personnel and some civilian contract labor (Cory and Joslyn Co. of San Francisco built the heating plant) (Bush 1944). The runway reportedly used more concrete than was present at the time in all of Alaska's roads and sidewalks (Garfield 1969:61), and the facility possessed some of the few permanent structures (including some of reinforced concrete) to be built in Alaska during the war (Thompson 1984f). In addition to the construction involved with the actual field and support facilities, it was found that flood control was necessary to protect the site, and a three mile dike was constructed along Chena Slough in 1941 (Bush 1944).

The mission of Ladd Field was not combat related. Its initial aircraft complement consisted of one O-38F observation biplane, though this was increased by two B-17Bs and two YP-37s (one of each was to crash in tests). "By the end of World War II, virtually every type of aircraft, including some of foreign design, had been tested. Additionally, many items of equipment, clothing and other material used by the Army Air Forces had been scrutinized under the cold weather conditions of central Alaska" (Cloe with Monaghan 1984:147). It was not until June, 1940, that an Army Air Corps base with a combat role - Elmendorf Field at Fort Richardson - was begun, fulfilling the second point of the plan by establishing an operating base in the Anchorage area.

The Navy also began development of air facilities at Sitka, Kodiak and Dutch Harbor in 1939. In August, 1939, the Bureau of Yards and Docks signed contract NOy-3570 (cost-plus-fixed-fee) with Siems-Drake-Puget Sound, a coventure among Johnson Drake and Piper Company (Minneapolis, MN), Siems Spokane Company (Spokane, WA) and Puget Sound Bridge and Dredging Company (Seattle, WA). The contract was originally valued at \$15 million and involved 40 projects at Kodiak, 30 at Sitka and 20 at Dutch Harbor, which was designated somewhat later (USN 1952).

The first naval facility to be built was the Sitka Naval Air Station (NAS), initially completed in October, 1939. During planning and construction, the Sitka installation went from an Advanced Seaplane Base in 1937, to a Fleet Air Base (FAB) in 1938, to an NAS when commissioned in 1939; Naval Operating Base (NOB) status followed in 1942. The various designations represent mission and range of facility designations. Some structures from the Navy coaling station, closed in 1912, were reused, including a coal shed which was converted into quarters for construction crews (Hanable and Ponko 1983:38). The contractor reported that construction disturbed numerous archeological remains dating to the Russian occupation of Japonski Island, which served to complicate construction (Siems-Drake-Puget Sound n.d.). Construction began at Kodiak in September, 1939, with the facility being commissioned as a NAS in February, 1941; it subsequently became a NOB, and served as Navy Command Headquarters. Construction began at Dutch Harbor in September, 1940, considerably later than at closer-in locations. The facility was commissioned as a Naval Section Base (NSB) in 1941, and upgraded to a NAS a few months later.

The lands for Fort Richardson were set aside in April, 1939, and construction began in June, 1940. The funds authorization was initially cut from the budget, despite lobbying by Generals Marshall and Arnold in spring, 1940, leading Delegate Dimond to complain of "economy by annihilation" (Cloe with Monaghan 1984:23). The invasion of the Low Countries led to the rapid approval of a \$1.2 billion military appropriation, including \$12.8 million for the Fort Richardson project, in May. For the first time, the military budget exceeded \$1 billion (USRA 1965:58).

The facility was built with contract labor furnished by Bechtel-McCone-Parsons and is illustrative of some of the difficulties encountered in Alaskan construction during the buildup. The weather, of course, made construction uniquely difficult, but other aspects of administration were exacerbated by the particular situation in Alaska. By August, 1941, there were a total of 3415 civilian workers on the job. The Army Corps of Engineers (ACOE) was not given direct responsibility for the work at Ladd and Elmendorf Fields until January, 1941, when Captain Benjamin B. Talley was appointed Chief Engineer. He inherited a complex series of headaches. First, there was inadequate housing for personnel, and the contractor set up a facility, Anderson's Camp, for contract workers primarily brought in from outside the state. There were problems of jurisdiction over the camp and complaints about law and order, theft of materials and gambling (perhaps sponsored by the camp management). Labor unrest and contractual agreements also posed problems, with the Army threatening to use (and ultimately using) troops for various tasks to deal with potential labor stoppages. The position of the unions was that premium hardship rates should be paid and that only union labor and work rules should

be allowed, while the military took the position that a national emergency and patriotism should override rigid work rules and premium pay schedules. Inflation also played a significant role in all of this: in Anchorage, consumer prices rose between 25-30 percent in the first six months of 1941 (Talley n.d.).

Supplies often could not be purchased locally at any price, and delays in shipments (and mismatches in items requisitioned, insufficient quantities, reallocation, etc.) from the US often held up work. Communications and travel were also a problem. The ACOE had no assigned transportation and had to rely on available military transport, scheduled and/or chartered commercial transport and the outright begging of rides from all and sundry. Recently established radiotelephone communications within Alaska and with headquarters in Seattle were primitive at best, and delays of several days duration before a usable connection could be established were common. Design and other questions had to be cleared through Seattle, and it was 1942 before any significant authority was granted to Alaska-based officers to make decisions regarding non-standard requirements. As an example of the difficulties engendered, the Fort Richardson Bachelor Officers' Quarters (BOQ) could not be built within statutory cost limits using the standard design plans for such facilities. There was a delay while alterations in design were requested from Seattle, a further delay when the request was initially denied and had to be resubmitted and additional delay when, upon approval of the change in standard design, the work on new plans was let to a firm of Seattle architects. Standard design and headquarters-approved plans also called for water towers in line with the runway approach at Elmendorf and aqua systems for fuel storage tanks at Elmendorf and Ladd which were unsuited to subarctic conditions (Talley n.d.).

The initial construction in Alaska at Ladd Field, Fort Richardson, Kodiak, Sitka and Dutch Harbor involved permanent and semi-permanent structures such as standard design Married Officers' Quarters, BOQs, NCO apartments, hospitals, theaters, laundries and warehouses. While the military had attempted to standardize structure types since the late nineteenth century, the modern history of such structures dates to World War I. The Quartermaster Corps Construction Division developed the Series 600 structure in response to the need to house recruits during training. The result was a wood frame building with board and batten siding resting on wooden piers. It was without plumbing and heated with wood-burning stoves. Between the wars, the plans were upgraded, but it was only when the Public Works Administration needed quick housing for relief project participants that the new Series 700 structure were developed. The new structures, built using new lumber sizes, had larger rooms, improved sanitation (usually indoor) and heating, termite shields, and were built on concrete piers. The CCC building was a reusable off-shoot of the Series 700 type. While Series 700 structures were being installed in 1940, an improved Series 800 version was being designed, although it would only be ready beginning in 1942, and would not be used in Alaska (Henry and Henry 1982). Construction was elaborate and expensive in terms of materials, skilled labor and time to erect, and was suited to stateside, peacetime installations. Time, materials and skilled labor were all at a premium, and after Pearl Harbor such permanent construction was superseded by

less costly types of facilities. In addition to the lack of suitability of structure types, base design with regular layout and high-density of structures, as per the accepted stateside pattern, did not allow for dispersal or camouflage, making the facilities indefensible potential war zone targets (Bush 1944). The standardized base layouts, prescribed by the ACOE Engineering Manual, were designed to minimize infrastructure (roads and utilities) and land use as much as was consistent with fire safety and traffic patterns. Buildings were wedged into blocks with intervening firebreaks. A grid pattern was specified to minimize internal travel time and distance, resulting in closely packed arrangements of buildings. Between October, 1940 and May, 1942, planners worked to reduce the length of roads needed to serve standard layouts by 44 percent in the interests of economy (Henry and Henry 1982).

As Bush (1944:227) states, "the primary reason for construction in Alaska was to establish an offensive or defensive system of airfields." In 1939, there were only four developed civil airfields in Alaska (Fairbanks, Anchorage, Juneau and Nome) and these were usable only on a seasonal basis. They were supplemented by perhaps 100 makeshift bush landing strips which were privately constructed and maintained (Cloe with Monaghan 1983:27). In July, 1939, the Civil Aviation Administration (CAA) started an emergency program of airfield construction. This program began fields at Summit, Talkeetna, Moses Point and Yakataga, with radio installations at Nome, Ruby, Fairbanks, Anchorage, Cordova, Yakutat, Juneau and Ketchikan; weather stations were set up at Moses Point, Summit, Talkeetna and Petersburg (Draft History 1944:387). However, it was not until August, 1940, that the CAA was directed to begin planning airfields with military usage in mind. Surveys were made and sites selected in late 1941, with construction begun at eleven of the sites: Nome, West Ruby/Galena, McGrath, Bethel, Big Delta, Northway, Gulkana, Cordova, Juneau, Naknek and Cold Bay. The CAA also worked on facilities at Anchorage's Merrill Field, Aniak, Farewell, Homer, Iliamna, Kenai, Minchumina, Nenana, Seward, Tanacross and Tanana (Draft History 1944:387-388). Other sites selected for CAA fields were Annette Island (Metlakahtla), Port Heiden and Sand Point (Morison 1951). While such work was sorely needed in Alaska, the undertaking was probably too ambitious. Siting was often haphazard. With sites surveyed in winter and/or by air, actual ground conditions with features such as swamps prevented completion of runways and necessitated relocation after much wasted work, as at West Ruby. Siting sometimes failed to take into account obstacles along approach routes, as at Nome. The construction was sometimes of questionable quality, and the design not suited to military usage, since the added weight of a military payload required a better-prepared surface and longer runways than the civilian aircraft for which the fields were initially planned (Talley n.d.). Most of the CAA fields which were incorporated into the military system required additional work by Corps of Engineers construction detachments, beginning in 1942, to bring them up to these standards. Of the CAA fields, only Cold Bay ultimately approached anything like a combat role although many of the fields in the interior were heavily used in the Northwest Air Transport and the ALSIB ferrying routes; other fields, particularly those in the Southeast and at Nome were anticipated to be used for combat when begun. Runways at Juneau and Cordova were completed by the CAA, as were all fields in the interior except Ladd (QM Corps and ACOE).

and Mile 26 auxiliary airfield (Morrison-Knudsen). The field at Cold Bay was begun by Morrison-Knudsen under CAA contract, but finished by the ACOE. The Kodiak, Sitka and Dutch Harbor air facilities were built by Siems-Drake-Puget Sound under the Navy contract.

Airfield construction also provided the introduction to a series of cold weather engineering problems. Basic functional design and layout was essentially similar to that of forward bases in the Lower 48 as well as to the various areas of the Territory, with the standard runway being 5000 feet in length and 250 ft. wide, with taxiways, hardstands and revetments for access and storage. Local conditions imposed a wide variety of specific modifications, usually based on the availability of equipment and materials. Again, the cold, which could reach -60 degrees F, was not the primary difficulty, though it amplified the problems of working in a frontier zone in wartime.

The preferred method of construction involved the stripping of muskeg - an uneven, spongy ground cover of bunch grass, sphagnum moss, standing pools and little if any woody vegetation - to a solid base of bedrock or stable substrate. This could only be done with power equipment, which was in short supply, mostly unsuited to the task, could only handle limited amounts between dumping loads, and constantly ran the risk of bogging down in the muck. Runways at Annette Island, for instance, required stripping to a depth of up to 18 feet. In areas with permafrost, a perpetually frozen substrate, steam-thawing and hydraulic excavation techniques, often adapted from mining, were used to enable the material to be worked. Where permafrost was not a problem, drainage often was, necessitating elaborate drainage system construction. Where tidal proximity affected the water table and the stability of the substrate, control dams were necessary to maintain the surface tension of the field. Such constructions were used at Adak and Amchitka but were considered for use at Yakutat as early as 1940 (Talley n.d.).

At Kodiak the runways had to be blasted out of bedrock, but in most cases, considerable fill was required to even out the surface and/or to replace the stripped organic layers. At Shemya, 50 ft. of sand fill would be required for some sections of the runway. This in turn required quarrying and crushing operations, since commercial quarry material was seldom if ever available, as well as road building to transport the materials. Quarry run rock, gravel, volcanic ash, pumice and sand were utilized as fill. The latter materials were also used as surfacing at numerous airfields, especially in the Aleutians. Reinforced concrete runways were rare, and the frost heaving associated the subarctic and arctic climates meant that constant, extensive maintenance was required in addition to the heavy initial use of expensive, strategic materials. Bitumen and asphalt were also used, albeit rarely and sparingly. Steel runway matting was used as a substitute for conventional surfaces. Pierced steel planking (Marsden mat) was the most common type, with bar-and-rod type being used for taxiways and hardstands. These surfaces, while making profligate use of strategic materials, were quick and easy to install and provided an acceptable surface when laid over a properly prepared footing. They did have a tendency to "bounce" the aircraft on landing,

"ripple" under the weight of heavier planes, and "roll up" in high winds. Steel matting was not available until February, 1942, and hence was used primarily at forward bases in the Aleutian chain (Bush 1944).

The fourth and fifth goals of the Alaska defense plan - garrisoning the Army airfields and Navy bases with combat troops for the protection of those sites - also required facilities, and attempts to prepare them began with the recommendations of the Greenslade Board in May, 1941. The scopes of work presented by the Hepburn Board for Sitka, Kodiak and Dutch Harbor were expanded to include more naval facilities at these sites, and Army garrison facilities, to be constructed by the civilian Navy contractor, were added, as were subsidiary Naval Section Bases (NSB) at Sand Point, Port Althorp and Port Armstrong. The contemplated expenditure for all these projects rose from the \$15 million of the Hepburn Report to \$165 million (USN 1952).

The Army, while agreeing to share bases and facilities with the Navy, gave their portion of each such cotenancy facility its own designation when construction began early in 1941: Sitka became Fort Ray, Kodiak became Fort Greely, and Dutch Harbor became Fort Mears. In addition, the Army would ultimately grant a "Fort" designation to individual battery installations. Hence, Fort Richardson, with a single name, encompassed over 40,000 acres, while the Army facilities at Dutch Harbor included almost two dozen named outposts with several different "forts", some consisting of little more than an isolated battery or observation outpost. The Navy had not set aside areas for the Army in the initial planning stage, so in most cases, there was little or no suitable land available for Army facilities. When Army facilities were shoehorned in, it served to complicate the problems of dispersal, camouflage and defensibility, leaving crowded masses of barracks and other structures.

At Sitka, the Navy facilities covered the prime site at Japonski Island, and Army facilities had to be built on adjacent small islands. To connect the various parts of the base and allow access, causeways were built between nine separate islands. Problems with a lack of materials for the mandated standard QM plan Theater of Operations (T/O) structures caused extensive delays. At Kodiak, there was a similar lack of room at the main naval area in Womens Bay, leaving the Army facilities to be built, under protest of the Army, north of the Buskin River on swampy ground at some remove from the base they were designed to protect. The sharing of facilities also proved easier to plan than to execute: the Army Air Corps facilities were at the Navy field, but were strictly separate, leading to exactly the duplication which sharing was supposed to eliminate (Thompson 1984e). At Dutch Harbor, the ranks of Series 700 structures crammed into "surplus" land in the Margaret Bay area not only became targets for the Japanese, but also failed to provide adequate housing for Army operations, leading the Army to expand up the Unalaska Valley behind the Town of Unalaska, across an unbridged channel from the main naval base.

The difficulties of coordination between the services on the ground were symptomatic of the attitudes which kept the Army and Navy at odds during much of the war. Prior to the war, Alaska was under the jurisdiction of the Thirteenth Naval District, headquartered in Seattle, which in turn was under the command of the Twelfth Naval District (San Francisco), with responsibility for what was called the Pacific Naval Coastal Frontier. In 1940, a separate

Alaska Sector (ComAlSec) was established, under the command of Captain Ralph C. Parker, with headquarters at Kodiak and the gunboat Charleston as his flagship. The District Coast Guard, headquartered at Ketchikan, was ordered to operate under ComAlSec. One of Parker's duties was to recommend sites for the establishment of additional naval facilities, but with the exception of the Greenslade additions, Parker's recommendations were ignored (Draft History 1944:3).

Until July, 1940, Alaska was within the Ninth Corps Area, which was commanded by Lieutenant General John L. DeWitt of the Fourth Army. Given the projected rapid and extensive military development in Alaska, it was decided that an on-site special commander was needed, and DeWitt proposed his chief of staff, Colonel Simon Bolivar Buckner, Jr. Buckner was appointed July 9, 1940, arriving in the Territory July 22, 1940. The garrison was redesignated the Alaska Defense Force, and Buckner was promoted to brigadier general in September. In February, 1941, the area would be designated the Alaska Defense Command (ADC), with headquarters at Fort Richardson. The ADC Air Force was established in October, 1941. By 1941, there was an argument over whether to make Alaska a separate department. Brigadier General Carl Spaatz of the Army Air Corps argued that Alaska was sufficiently geographically, strategically and tactically separate to warrant independent command, while DeWitt, argued that the need for coordination of effort meant that it should stay under his command. DeWitt's viewpoint ultimately prevailed (Conn et al. 1964:231-32).

In Alaska, Buckner and Parker became personal friends who worked well together, but the differences in official service policies regarding responsibilities and the lack of success in gaining priority access to scarce resources stymied the development of a lasting working relationship between the services. Most of the planning done in these early days was of an ad hoc nature, an attempt in the absence of concrete support from up the chain of command to accomplish a mission and establish workable understandings. In August, 1941, the USCG, the ADC and ComAlSec formulated a joint plan calling for long-range air reconnaissance, local defense against small-scale raids, convoying for seaborne shipping and cooperative organization of facilities for mutual use and benefit. "The Navy was unable to get necessary shipping for patrol work, the Army was unable to get aircraft necessary for patrolling and for protection of the new bases, and both were constantly turned down on recommendations for physical expansion in men and materiel and on all demands for a change from strict defense to a growing offense" (Draft History 1944:4).

Internally, there was a lack of agreement as to how best to defend Alaska aside from the strategic Army-Navy arguments about respective service roles. One position held that there should be a mobile striking force located at the "time center" of Alaska (i.e., at Fort Richardson) which could be rushed to the site of enemy action. This would centralize and concentrate necessary construction and manning needs, while limiting the number of far-flung, vulnerable posts to be maintained. The main argument against this plan was that transport and logistic capabilities were inadequate to effectively support it. The alternative was to establish strategic strongpoints to control the entire area, which its opponents argued was to invite destruction piecemeal. The latter format was never officially accepted, but did form the

accepted basis for Alaskan strategy throughout the war, as seen by the gradual expansion of bases and shift from east to west (Draft History 1944:6-7).

The first reinforcements to reach Alaska consisted of 780 soldiers who arrived at Fort Richardson in late June, 1940. In August, Major Everett S. Davis, senior representative/advisor from the Army Air Corps, arrived in Anchorage in a B-10B bomber, the first military combat aircraft to reach Alaska. This aircraft roster was augmented by the 18th Pursuit Squadron with 20 crated P-36s in February, 1941, and the 73rd and 36th Bomber Squadrons, with a complement of 14 B-18As in March. All the aircraft were obsolete types unsuited to combat, especially in Alaska. By November, 1941, only six of the B-18s would be flying. The Navy air forces were even less of a presence, with only two observation planes, an OS2U at Kodiak and a J2F at Sitka (Cloe with Monaghan 1984:38,39).

There were few military personnel, though their numbers were growing rapidly. The low initial base meant that percentage increments were more impressive on paper than on the ground. The 1940 census listed a population for Alaska of 76,000, of whom about 1000 were military personnel (Cloe with Monaghan 1984:27). By the beginning of 1941, there were about 3000 troops in the Territory (USRAL 1965:85). Between June and October, 1941, ADC forces grew from 7263 to 21,565, while the Navy had 180 at Sitka, 300 at Kodiak and 67 at Dutch Harbor, for a total naval strength of only about 550 and a total military strength of about 22,000 (Cloe with Monaghan 1984:38). The assignment of forces left Sitka with 2020, Kodiak with 5835 and Dutch Harbor with 5425 (Conn et al. 1964:237).

To augment these forces, the War Department set to work in mid-1940 to establish the Alaskan National Guard, consisting of nondraft age or deferred draft status men. The 297th Infantry Battalion was authorized. Activated in September, 1941, it was sent to the US for training. Some units actually served in Alaska during the war (USRAL 1965:84; Cohen 1981:4). The formation of the National Guard was followed by the organization of the Alaska Territorial Guard (ATG) after Pearl Harbor in January, 1942. Buckner suggested the establishment of a body of 888 "irregulars," and a "home guard" was authorized for nonstrategic defense, with regulars being left to protect strategic facilities and routes. Governor Gruening and his military attache, Captain Carl Scheibner, were officially responsible for the ATG. The actual organization was accomplished by Scheibner and Major Marvin R. "Muktuk" Marston, a "Lawrence of Arabia" type figure transplanted to the North. Marston travelled over northern and western Alaska recruiting the Eskimos as scouts and guerilla cadres. He passed out surplus 1917 Enfield rifles and ammunition, arranged for the construction of armories ("kashims," which served as local community centers as well) and made some supplies available. Indirectly, he provided a basis for later political organization among the Eskimo, championing Native rights at a time when such was unfashionable. Although the ATG never served in combat, it did provide scouting and intelligence services, rescued downed fliers and built trails. After World War II the ATG formed the nucleus of the regular National Guard (Hendricks 1985).

Another unit which played a role in Alaska was the Alaska Combat Intelligence Platoon, or Alaska Scouts. Also known as "Castner's Cutthroats" after Colonel Lawrence V. Castner, the intelligence officer for the ADC who founded the unit in November, 1941, they gathered combat intelligence and operated as commandos in most operations in the Aleutians as well as elsewhere in Alaska. The unit consisted of locals - Eskimos, Aleuts, Indians, trappers, sourdoughs and fishermen - with special knowledge of Alaska and survival skills. The unit operated independently, with the men being allowed to choose their own equipment and dress (Cohen 1981:97).

One of the most intractable problems with the development and defense of Alaska lay in its vast size and inaccessibility. In 1940, Alaska had a nominal 10,171 miles of roads and trails, only 2212 miles of which were suitable for vehicular use, and only 370 miles of which represented a major artery (the Richardson Highway) (Draft History 1944:290). During the war, the Army would build 1129 miles of roads (exclusive of the ALCAN Highway), most of them pioneer, or unimproved, roads (Bush 1944). The main internal road built by the military during the war besides the ALCAN was the Glenn Highway, which connected the Anchorage area with the main coastal-interior road, the Richardson Highway. This road was opened in October, 1942 (Bush 1944).

Roads were a relatively inefficient means of moving personnel and materials in Alaska. The primary land-based transport route was the Alaska Railroad. Early in 1941, it was recognized that this route was inadequate, especially the segment connecting the port of Seward, which was frozen in part of the year, with the proposed main base at Anchorage. The route was tortuous and vulnerable to potential enemy interdiction by air attack or sabotage. Other potential routes were considered, with a route linking the year-round ice-free Passage Canal site of Whittier with the main line at Portage, near the head of Turnagain Arm. This route would require major tunneling under glaciated mountains. A contract was let to the West Construction Company (Seattle, WA) in June, 1941, with construction beginning that summer. Two tunnels - 5000 and 14,000 feet long (reportedly the fourth longest tunnel in the world at the time) - were blasted, with holing-through occurring in November, 1942, six months ahead of schedule despite various contractor and supply problems. Port facilities were constructed at Whittier, and the line provided a critically important supply point from spring, 1943, onward (Bush 1944; Talley n.d.). The cost was some \$11 million (Cohen 1981:61).

Other railroad work involved reconstructing existing and/or abandoned lines for supply, as was the case with the White Pass & Yukon Railroad, linking Skagway and Whitehorse, Yukon Territories (from October, 1942), which was used to supply materials for the ALCAN Highway and CANOL projects in the interior of Canada. Similar work took place with the Copper River & Northwestern at Cordova, the Yakutat & Southern at Yakutat, and the Seward Peninsula Railroad at Nome for accessing and serving various bases. Internal spurs and switching were also built to service Ladd Field and Fort Richardson. With the exception of the main line of Alaska Railroad and the White Pass and Yukon, these other lines were minor in terms of trackage and importance (Bush 1944; Cohen 1981).

One problem experienced in running the railroads in Alaska was that many experienced personnel left for other jobs or were drafted, leaving the operators with a dearth of qualified personnel. Army Railroad Operating Battalions (the 741st, 713th and 770th) were brought in and provided the core of operating personnel for the duration of the war. The increased demands on the often poorly constructed rail lines, with their antiquated equipment (the initial authorization for the Alaska Railroad stipulated that it would use rolling stock from the Panama Canal railway), also caused operating problems, which required constant repair and improvisation throughout the war.

Ocean shipping was the primary means of access and supply to Alaska at the beginning of World War II. Ninety percent of all goods, including subsistence, were imported from the outside during the prewar period, with virtually all coming in by ship (Draft History 1944:280). At the beginning of the war, there were eight commercial shipping lines serving Alaska, using Seattle as a Port of Entry (POE). The military took over the operation of most of these firms, either through lease or direct regulation. The Army leased from private and corporate owners 53 seagoing tugs, two shallow-draft tugs, 18 power barges, two schooners and 101 scows for use in Alaska during the war, and in early 1943, operated a total of 190 watercraft of various types (Draft History 1944:374). The Army also operated three sternwheelers as river transport on the Yukon and Kuskokwim Rivers for internal supply.

Shipping was as difficult as anything else in Alaska. The route ran up the west coast of the US and Canada, which was open to potential enemy action by submarine and/or surface craft, so that what few naval vessels were available were often tied up in convoy duty. The Inside Passage formed a partially sheltered route along the Panhandle, but was difficult to navigate and only extended part of the way. The Gulf of Alaska was considered particularly vulnerable. Potential ports had numerous drawbacks as well. Seward was iced in several months each year and relied on the problematical link with the interior via the Alaska Railroad. Anchorage was also iced in and had to contend with the 30 foot tides of Cook Inlet. Cordova and Valdez were away from the main buildup areas and lacked the means for transshipping goods brought into their ports to the areas of need. With these difficulties, the need for the Whittier cutoff with its ice-free port becomes more understandable. The Bering Sea locations were even more of a problem, since they were usually closed eight months out of the year and even when open required lightering of goods, since there were few sites (none developed) with natural harbors. The shallow continental shelf extended several miles into the Bering Sea at Nome and several other sites. River transport was even less effective, since the major river systems of the interior were often frozen nine months of the year. The lack of facilities was also a hardship, reducing the military to using out-of-repair and inadequate cannery docks. At the beginning of the war, there were docks at Anchorage, Bethel, Cordova, Juneau, Ketchikan, Kodiak, Nome, Petersburg, Seward, Sitka, Skagway, Valdez, Wrangell and Yakutat; the major installation at Cold Bay could only be served by a fishery dock at King Cove, and the only port facilities in the Aleutians were docks at Dutch Harbor, Akutan and Kanaga (Draft History 1944:367f; Morgan 1980:162). Still, even after the construction of the ALCAN Highway and the opening of the Northwest staging route, sea transport was far and away the most significant means of supply, both military and civilian, for Alaska.

Given the isolation of the Territory and its lack of development at the beginning of the war, the military found that it had to build many facilities from scratch which in the normal course of events would have been provided by surrounding civilian entities or purchased on the market. Initially, utilities - power, light, heat, water, sewage - were often required where civil provision was inadequate or entirely lacking. In the early days of the buildup, steam generating power plants were constructed at Ladd Field and Fort Richardson, although later facilities relied on diesel generators (25,40,50, 75,100KW). Low voltage was to be a constant problem with brownouts and power failures occurring frequently. Electric power was to be used primarily for operating equipment and secondarily for light. Heat was a separate problem. Again, only Ladd and Richardson had general steam heat plants, though central oil-fired steam heat plants were installed for some facilities in individual buildings, such as hospitals and laundries. Most personnel had to make do with a variety of coal, wood and oil space heaters which generally worked poorly in terms of heat radiation, making the immediate vicinity unbearable while leaving areas away from the device essentially unheated. Atomizing oil burners were used for heating large barracks and for cookstoves (other cook stoves were electrically powered). Individual small structures were heated with coal-fired Sibley stoves (a relic of the nineteenth century cavalry frontier) and pot-type oil burners. The latter used a special blend of oil concocted for use in frigid environments. This fuel had a pour point to -40 degrees and a cloud point of -30 degrees. The use of any other grade of oil resulted in a 30% reduction in efficiency and a high incidence of flue fires and flareups. The low roofline and chimney profile on many structures coupled with the high winds led to blowback fires. Fire fighting services were also virtually nonexistent, and most military firefighting was geared to aircraft crash damage control rather than facilities protection (Draft History 1944:515f; Bush 1944).

Water and sewage disposal also had to be provided. Most installations used dammed pools or natural and/or modified reservoirs, with wells as backup for water supply. Water supply was often fairly informal, since in most areas of operations, there was a high water table. Where more formal systems were required, woodstave pipe and creosoted storage tanks were usually used. Alaska's climate led to the introduction of an innovation: the utilidor, an enclosed, heated utilities conduit for utility lines. The ones installed at Ladd Field were walk-through structures which also allowed for ease of monitoring and repair. Some were even used as regular passageways between buildings during the winter (ASCE 1976; Thompson 1984f). Sewage treatment was even more informal than water treatment. Ladd Field had the only septic system built by the military in World War II. Other facilities used pit latrines or discharged sewage directly into bodies of water or streams (Bush 1944).

Other facilities were also lacking. Cold storage for subsistence and other perishables was an unexpected problem in Alaska. Initially, units used commercial cold storage where available, such as at canneries, but eventually extra capacity had to be built. A variety of cold facilities were used, including 15-40hp self-powered permanent cold units, CCC-type units and specially constructed Universal Cold Corporation units (Draft History 1944:517). Laundries, bakeries, repair shops and various service facilities

had to be built, as eventually did theaters, gymnasiums, and other recreational facilities (Dutch Harbor and Fort Richardson eventually received ski-lifts). Forward bases usually lacked all but the bare minimum of such amenities, but rear bases often furnished a considerable range of opportunities. Major service facilities such as drydocks and ship repair facilities were also lacking. Most repairs were undertaken in Seattle, but commercial units were extant at Cordova, Ketchikan and Juneau, though they were ill-equipped to handle major military shipping. Drydocks of varying sizes were ultimately built at Seward, Dutch Harbor, Excursion Inlet, Adak and Attu (Bush 1944). While much of Alaska had an abundance of timber, there were few mills and few ways to deliver lumber. Much lumber was shipped in from the Pacific Northwest, with more coming from southeast Alaska. Some was even shipped in from Siberia as payment for Lend Lease goods; Cold Bay was used as a depot for such lumber for a time (Bush 1944). Where available, local timber was used, and the Army built and/or operated sawmills at Whittier, Seward, Big Delta, Excursion Inlet, Cordova and Juneau (Talley n.d.).

Communications were also a problem within Alaska and between Alaska and other commands. As noted, the radiotelephone link with the outside left much to be desired, and much of the equipment for internal communications was obsolete. The undersea cable linking Ketchikan and Seward with Seattle had been placed on reserve status in 1931, and was no longer operable by 1940. Land lines had been abandoned in 1923 because of maintenance difficulties except for a line paralleling the Alaska Railroad, so that there were no backup systems or secure communication available. The ACS (which officially replaced WAMCATS in 1936) had been run primarily to transmit civilian messages. In 1940, the 200 personnel of the ACS operated 11 stations at Nome, Bethel, Kodiak, Seward, Anchorage, Fairbanks, Cordova, Yakutat, Sitka, Juneau and Annette Island. Most used a system designated the DBR, which was said to stand for "Damned Big Rush," since it was adopted and installed without adequate testing. With the military buildup, the ACS was taxed beyond its effective operating ability as War Department traffic increased by 200% from 1939 to 1941 (Signal Corps History 1945:180).

The Signal Corps was ordered initially to build ten more stations (Dutch Harbor, Port Heiden, Naknek, McGrath, Galena, Cold Bay, Big Delta, Gulkana, Boundary and Umnak), repair the undersea cable, and establish new high-speed radiotelephone circuits between Seattle and Fairbanks and Kodiak. It was also instructed to establish an ADC operating network with a control station at Fort Richardson, with substations at Kodiak, Seward, Yakutat and Annette Island. As with other areas of overlapping concern, the split of duties between the Army and Navy Communications required a somewhat arbitrary separation of responsibilities. The ACS became responsible for the security of communications within Alaska and between Alaska and Seattle (the only direct origination point for messages from the US); it was also responsible for communications monitoring, surveillance, and cryptography. The Navy would be responsible for the security of communications originating from points outside the US (which technically left them the responsibility for communications from Canada) as well as ship-to-shore communications. The services would share responsibility for censorship, which would prove to be anarchic in execution. The Navy had the edge in cryptography, and most cryptographic intelligence would actually originate from naval sources,

although the Army would generally operate the SIGABA and M-94 cipher encoding machines throughout the war.

In addition, an attempt was made to standardize the equipment used in the Territory. In terms of the latter, a package was put together by the Signal Corps in Seattle consisting of four quonset huts (to house equipment, personnel and generators), RCA ET-3626 750 watt medium frequency (MF) transmitters (these were obsolete marine radios modified and refitted by the Signal Corps in Seattle), Intervox H-300 300 watt high frequency (HF) transmitters (manufactured in Seattle to ACS specifications), Sargent ACS MF-HF receivers (made to specifications), an operations table, a variety of antenna arrays (loop, rhomboid, etc.) and an International Palmer 15 KVA gasoline generator power unit. There were 20 pages of layout plans and specifications, and a demonstration installation was set up at Signal Corps headquarters in Seattle (Signal Corps History 1945:180-181). A variety of other equipment types would be used, but most installations, especially at forward bases, would utilize this configuration.

To complete its mission, ACS staff was increased to 428 military and 171 civilian personnel by January, 1941. The ACS became involved in the scramble for space in Anchorage after it was designated as the control station for the ADC network. Initially, the Alaska Signal Depot operating out of a commandeered abandoned chicken coop and tents on a vacant lot in downtown Anchorage; later it would command two warehouses at the Alaska Railroad yards. A private would be assigned to sleep in the ACS offices in the Anchorage federal building to prevent other groups from taking it over during the night. The ACS was allotted the cableship Restorer, which, working in fall, 1941, had the Seattle cable repaired and operable by December. By January, 1942, there were 23 ACS stations in operation and following Pearl Harbor, communications to the States by radiotelephone was restricted to military use (History of the ACS 1945). Still, it took four days to pass the word when a general alert was declared in July, 1941, and the ADC was informed of the attack on Pearl Harbor by a civilian radio operator who heard of it by chance while fiddling with the dials on a shortwave set and called the duty officer at Ladd Field (Cloe with Monaghan 1984:40). The ACS was simply not adequate for a military communications role at the outbreak of the war.

Other aspects of the Signal Corps preparations in Alaska included the work on the Aircraft Warning System (AWS) and the development of the separate Army Airways Communications System (AACS) to handle air traffic control and weather reporting. The latter went into service in mid-1941. Radar was still new and had limited capabilities, but plans were made also in mid-1941 to install the available SCR-268 Antiaircraft (AA) searchlight radars and, mobile long-range SCR-270 and fixed long-range SCR-271 radars to provide early warning. Later SCR 521 (Air-to-surface vessel, or ASV) would be used, primarily for navigation rather than for detection and SCR-296, surface vessel detectors, along with the SCR-588 improved long-range types (Draft History 1944:469f; Raynor et al. 1957:255). The initial plan of August, 1940, called for the construction of eight radar stations, but this was increased to 12 by January, 1941, and Buckner requested that the number be upped to 20. The number was later cut back to ten. None was operable before 1942 (Conn et al.

1964:245-246). The first mobile unit was set up at Fort Richardson in November, 1941, but was later moved to Montague Island, with the first fixed unit at Cape Chiniak (near Kodiak, also designated as Fort J.H. Smith) going into service in February, 1942. By May, 1942, there were four fixed units and one mobile unit in operation (Draft History 1944:470f.). The system was inadequate, given the vastness of Alaska, the anomalies of atmospheric conditions, and the limits of the equipment. The 270 series required an unblocked 360 degree range, so that installation on peaks was required, increasing the lag time, vulnerability to attack, and construction and support costs for access and support infrastructure. While numerous radar stations would ultimately be built, supply could not keep up with demand, and most proposed installations were dropped in the planning stage as the war moved westward or, if begun, were never completed. Nor would they prove to be particularly effective, since most aircraft warning in combat zones came from visual spotting by ground observers (Cloe with Monaghan 1984:40) and there proved to be little need elsewhere.

During the second half of 1941, while the Navy continued working on the joint facilities at Sitka, Kodiak and Dutch Harbor, the Army's construction focus shifted from Ladd Field, Fort Richardson, Yakutat and Annette Island (which were essentially complete) to construction at Cordova, Seward, Whittier and Nome. Cordova and Seward turned out not to be particularly important, and Whittier was handled by a civilian contractor, requiring only ACOE oversight. However, with the USSR-German nonaggression pact, there was renewed concern in August, 1939, that the Bering Strait area was vulnerable to attack from Russia and/or Japan (Conn et al. 1964:233). With the Red Scare engendered by the supposed Soviet buildup in Siberia, construction at Nome became a priority item. Preliminary work had begun early in 1941. The remains of turn-of-the-century Fort Davis were adjudged useless, and the new installation centered on the site of the new airfield west of town. Construction personnel had to contend with cold weather, a lack of equipment (no heavy machinery or even vehicles were available until after July, 1941), and inflation which increased prices by 100% during 1941 (Talley n.d.). By the time the base was completed at the end of 1941, the strategic situation had changed, and the USSR was no longer considered a threat. Soviet flying boats (PBN Nomads built under contract by Consolidated) visited Nome in fall 1941, harbingers of an uneasy relationship which would last throughout the war (Talley n.d.).

The German-USSR nonaggression pact had made Alaskans and military planners fear a Soviet attack. The formation of the Axis Alliance in October, 1940, and the signing of a nonaggression pact between Japan and the USSR in April, 1941, made the likelihood of joint or independent Japanese-Soviet aggression in Alaska seem even greater. It was not until Operation Barbarossa - the German surprise invasion of the USSR in June, 1941 - that Russia ceased to be perceived as a threat in the North Pacific. In fact, the rapid advance of German troops on the Eastern Front made it seem likely that Russia would soon be out of the war entirely. With Russia removed from activity in Alaska, the emphasis changed from the Bering Strait area to the Aleutian Chain, the most likely point of contact with Japan. Such contact became more probable when Roosevelt, in response to Japan's move into Indochina and a draft callup of 1 million conscripts, signed an executive order freezing Japanese assets in the US and instituting an embargo on strategic materials (mostly oil and scrap

steel) to Japan. This July, 1941 order was seen by the Japanese as an act which clearly threatened their interests, was arbitrary, and a threat to their security. Roosevelt also called General Douglas MacArthur out of retirement and put him in command of the US garrison and the newly activated Philippine Army in that possession as a signal of the US determination to resist (Spector 1985:68-69). In August, 1941, Roosevelt and Churchill announced the Atlantic Charter, further binding the US to the belligerents.

Navy construction had been expanded to include the new facilities recommended by the Greenslade Board. The Sitka base now included jurisdiction over support bases (NSBs) at Port Armstrong and Port Althorp, as well as at Ketchikan, which was built and operated by the Coast Guard. Kodiak expanded with the addition of perimeter facilities on Woody Island, Entrance Point and Afognak Island.

Dutch Harbor was initially chosen for its natural harbor and its strategic location near Unimak Pass, the primary route around the end of the Alaska Peninsula between the Pacific Ocean and the Bering Sea. It was also thought to be close enough to the Alaskan mainland to be supplied and defended while not appearing too aggressive to the Japanese as a base further out the Chain might have (Denfeld 1985). The main naval facility was located on Amaknak Island, as were the barracks of Fort Mears. The rugged volcanic island provided a large number of locations requiring defense. A wide variety of subsidiary facilities - mostly observation points, batteries and fire control/searchlight installations - were built. Three of these batteries were given separate fort designations: Fort Schwatka at Ulakta Head at the harbor entrance, and Fort Learnard at Eider Point and Fort Brumback at Constantine Bay flanking it. Other outposts included Hill 400, Pyramid Peak, Hog Island, Morris Cove, Kalekta Bay, Erskine Point, English Bay, Agamgik Bay, Zharaoff Point, Ugadaga Bay, Uniktali Bay, Udagak Strait, Cape Prominence, Cape Wislow, Nateekin Bay, Portage Bay, Makushin Village and Unalga (Cuttlefish Five:88f). The initial battery construction at Dutch Harbor, as well as at Kodiak and Sitka, consisted of mobile batteries of 155mm rifles on Panama mounts. Panama mounts consisted of a concrete center plug and a concentric ring of concrete on which the carriage trails rested, so that the piece could be rotated for a 360 degree field of fire (Thompson 1984c; Bush 1944).

The stated mission of the Navy at Dutch Harbor was to project naval power and that of the Army was to protect the Navy, mainly from air attack and/or amphibious invasion; in either case, Army air cover would play a major role in the defense. The problem was that there was no site for an airfield in the Dutch Harbor vicinity. Seaplane facilities were built and a runway was being blasted out of the slopes of Mount Ballyhoo, but it was expected to be inadequate to support serious aerial activity. In summer, 1941, General Buckner ordered an intensive reconnaissance of potential airfield sites in the Aleutians. The Charleston, with its SOC-1 floatplane, was sent out as far as Kiska, with aerial surveys being conducted of Unalaska, Umnak, Adak, Tanaga, Amchitka and Kiska. Lieutenant Commander William Miller of the Navy and Lieutenant Frank L. O'Brien of the Army recommended Otter Point on Umnak as the only feasible site in the Dutch Harbor area (Cloe with Monaghan 1984:42). Colonel Everett Davis and Major B.B. Talley made a reconnaissance by a OA-5

Pelican in fall, 1941, and came to the same conclusion. Despite the initial objections of both the Navy and the Army command, Buckner and his commander, General DeWitt, continued to press for the airfield, which was approved in late November, 1941. Actual construction for facility, named Fort Glenn, began in early 1942 (Bush 1944). Surveys at the same time suggested that backup facilities be built at Cold Bay, Port Heiden and Sand Point. Cold Bay (Fort Randall), the site of a CAA field already under construction, and Port Heiden (Fort Morrow) were approved, while Sand Point was dropped, though the Navy subsequently built facilities there.

Cold Bay lies some 200 miles ENE of Dutch Harbor, with the 9000 foot Shishaldin Volcano on intervening Unimak Island providing a navigational hazard. Otter Point lies about 60 direct air miles SSW of Dutch Harbor, though the effective distance is closer to 80 miles, since aircraft generally follow the sinuous coastline to avoid the almost 7000 foot Makushin Volcano. Both locations would present supply problems, with the nearest port to Cold Bay at King Cove and to Otter Point at Chernofski across turbulent Umnak Pass. The Navy argued that it could not provide necessary logistic support, that the locations were too far away to provide effective defense of its installations and, finally, that the basic patrol functions could better be performed by Navy seaplanes serviced by tenders. This last issue became a sticking point. Buckner had instituted coastal patrols between Naknek and Nome, with attempts being made to cover the coast north to Point Barrow as well in October, 1941. The Navy objected to this usurpation of the naval offshore patrol mission, and demanded that Buckner stop the flights. Buckner countered that the Navy had no aircraft to substitute for his B-18s, which ultimately led the Navy to station six PBY-5A Catalinas in Alaska. Backed by General DeWitt, he not only held out against the attempt to cut off his aerial responsibilities but fought for his airfields at Forts Glenn and Randall. Not only was the former site the only feasible one for an air facility for Dutch Harbor, but it could also serve as a forward base to carry the war to Japan along the Chain, a dream held by both DeWitt and Buckner (who described the Aleutians as a "spear pointing straight at the heart of Japan" (quoted in Garfield 1969:73)).

Buckner had considered that the situation justified extraordinary measures (irregular and informal procedure was common in Alaska, especially during the buildup) and had begun the projects using funds diverted from CAA projects. To conceal his machinations from the Navy and the War Department, it is said, as much as from the Japanese, he disguised the military construction at Otter Point, Cold Bay and Port Heiden as private construction of commercial canneries. Supplies for Fort Glenn were shipped to the "Blair Fish Packing Company" and those to Fort Randall to "Saxton & Co.", with the return address listed as the "Consolidated Packing Company, Anchorage" (the ADC headquarters). Internally, Fort Glenn was Project A while Port Heiden was Project Y; Cold Bay was considered to need somewhat less cover, since it was already authorized as a CAA, though not as a military field. Port Heiden (Fort Morrow) was also prepared, with the planned CAA facility being upgraded as a backup military field; it was disguised as "Bering Fisheries."

On the eve of the Pearl Harbor attack, there were approximately 20,000 ADC personnel in Alaska. Fort Richardson was essentially complete, as were the staging fields at Annette Island, Yakutat, Elmendorf and Ladd. Army garrisons existed at Sitka, Kodiak, Dutch Harbor, Seward, Nome and at Chilkoot Barracks. Five airfields along the Northwest Staging route in Canada (Grand Prairie, Fort St. John, Fort Nelson, Wataon Lake and Whitehorse) were provisionally usable, with the refurbished Edmonton Municipal Airport providing a sixth. However, only eighteen obsolete combat aircraft were airworthy on December 7, 1941, the AWS was not operable and there was little in the way of transport, armor, artillery or ordnance (Kodiak, the main naval base, had 17 minutes worth of ammunition for its batteries) and materiel for active defense of the Territory (Conn et al. 1964:250-252).

Alaska, including the military, learned of the Japanese attack on Pearl Harbor by commercial radio. The Japanese task force which hit Pearl Harbor had set out from bases in the Kurile Islands, in the Northern Pacific sector and passed just south of the Aleutians before heading for Hawaii, slipping between patrol coverage zones. Its whereabouts were unknown, and Alaska might be targeted as well. All leaves were cancelled, civilian road and aviation traffic was banned, and civilian radio stations were ordered off the air. Many Canadians, unable to contact Alaska, reported that it had fallen, which was broadcast on Canadian radio, causing increased panic. Radio Tokyo broadcast that Dutch Harbor, Kodiak and Fairbanks were bombed and that Anchorage and Sitka had been captured. Anchorage was blacked out, with much of the populace preparing to head for the bush to escape and/or wage guerilla warfare (Garfield 1969:76-77). The panic extended down the Pacific Coast, with incidents in Seattle and San Francisco. After 48 hours, a semblance of calm was restored and the civilian population began to adjust to the new situation. Draft Boards swung into action, including those in remote areas, and Buckner ordered the evacuation of all military and contract construction dependents who were not previous residents. Travel to and from the Territory was strictly controlled and monitored. Military censorship was also imposed, with direct radiotelephone contact being limited to military traffic and mail and news being heavily censored. The initial untrained and overzealous attempts to conceal information of military importance left a virtually complete news vacuum both inside and outside the Territory. This led to rumors which became so prevalent that the commander of Fort Richardson vowed to prosecute anyone spreading rumors (Cloe with Monaghan 1984:45-46). The Territorial and military governments made plans to evacuate all civilians from military areas; plans were even discussed for the evacuation of the whole civilian population (Gruening 1954). Fears of sabotage, spies and "Fifth Columnists" led to investigations; Garfield (1969:79) reports that a small German spy network was uncovered, but that little in the way of subversion, especially by Japanese agents, was discovered, and Hulley (1953) discounts the role of intelligence gathering by enemy agents or sympathizers. In fact, the Japanese would prove to have very poor intelligence concerning the US war effort and Alaska in particular.

Within Alaska, there were shortages of such basic commodities as food and fuels - coal and gasoline - in the latter case due largely to the lack of adequate storage which prevented stockpiling. Military projects received renewed emphasis, especially forward posts and airfields. Two Army Air Forces squadrons were immediately ordered to Alaska for tactical deployment, but those assigned had to traverse the US and Canada to get to Alaska. By late January, 1942, only 13 of the 24 P-40Es assigned had been able to reach Alaska; six were delayed and five had crashed en route. The bomber squadron of B-26s arrived with only seven of its 13 aircraft (Cloe with Monaghan 1984:47). After this initial disastrous experience in ferrying aircraft to Alaska, a plan was devised whereby aircraft would be ferried from their point of origin to Spokane, WA, where they would be turned over to veteran Alaskan pilots for the northern leg up the staging route. The attrition rate of the initial operation was the deciding factor in Roosevelt's call for the construction of the ALCAN Highway in February, 1942 (Conn et al. 1944:256). More P-40s and B-26s would be sent to Alaska, so that by the end of March, one fighter squadron and one bomber squadron would have a full complement of planes. In the meantime, one B-17E and three LB-30s (the Lend Lease version of the B-24) were assigned for offshore patrol. Five C-53 cargo planes, arriving in early May, 1942, were the first military transports assigned to Alaska. Three Canadian squadrons were also assigned. One bomber squadron with 14 Bolingbrokes was assigned to Annette Island in May, 1942, and two fighter squadrons flying P-40 Kittyhawks would eventually arrive at Kodiak (Cloe with Monaghan 1984:48-49).

The organization charts coming out from Washington kept ahead of the reality. Buckner had earlier been given a promotion to Brigadier General, but not the troops and funds he had wanted. In January, 1942, the air arms were officially designated the Alaskan Air Force and, less than a month later in February, became the 11th Air Force (which in September became the "Eleventh" Air Force). There were two fighter and three bomber squadrons, plus a ground support unit for a total of just over 3000 men. In March, Colonel William O. Butler, who as chief of staff of the Fourth Air Force had worked out the arrangements for ferrying aircraft to Alaska, was appointed to command the 11th Air Force. Butler was a cautious administrator rather than an operations pilot. Buckner clashed with him and attempted to circumvent him by dealing with his bolder subordinates whenever possible. The force level present was inadequate to defend Alaska, but when viewed in light of the fact that in April, 1942, the Army Air Forces had a total of seven bomber groups and seven and a half fighter groups that were combat ready, the allocation of a full bomber group and half a fighter group to Alaska represented a major commitment of forces to the Territory (Cloe with Monaghan 1984:52).

After the attack on Pearl Harbor on December 7, 1941, the Japanese launched an attack on a wide front throughout Southeast Asia and the Pacific. Guam and Wake Island fell shortly after Pearl Harbor, Hong Kong fell on Christmas Day, 1941, and Manila fell January 2, 1942, followed by Singapore, "the Gibraltar of the East" on February 15, 1942 (some of the guns the Japanese emplaced on Kiska are thought to have come from British batteries at Singapore (Cohen 1981:249) though in fact all but three of the Singapore guns were destroyed in the battle with those three being kept in place for defense (Falk, personnel communication)). The oil fields of the Dutch East Indies fell in March. The Japanese had also sunk or seriously damaged ten battleships, including US

ships West Virginia, Arizona, Oklahoma and California and the British Repulse and Prince Of Wales, eight cruisers, two aircraft carriers, fifteen destroyers and various other shipping, at little cost to themselves. Allied forces proved to be unable to halt or even slow the Japanese advance. With the stunning successes to the south, it seemed to be only a question of time before the Japanese attacked in Alaska. In January, 1942, General Buckner and Captain Parker proposed that the US undertake negotiations with the Soviets to develop and use Siberian air bases, offering to help select the sites. They also recommended that the US forces plan for aggressive action against Japan to be launched through the Aleutians. In between these two "modest proposals," they urgently requested more men and materiel for rapid completion of the advance air fields, reinforcement of Alaska with ground, sea and particularly air troops, and more land- and sea-based planes (Draft History 1944:5).

The requests for "more" were standard operating procedure and received the standard reply that there were other critical areas that had a prior claim on the scarce resources. The remaining proposals impinged on high level strategic issues. Roosevelt had already proposed that the Soviets allow the US to operate from Siberian bases. The Soviets, however, were losing the war in Europe (although by late 1941, the Eastern Front had stabilized, with the Russians regaining some of their lost ground), had a nonaggression pact with Japan, and could not afford to open a two-front war (Conn et al. 1964:253). As it turned out, the Japanese were the main beneficiaries of Russian neutrality, since they had all along feared the Russians and were now involved in areas far from home. The US was to remain frustrated throughout the war, since without mainland bases in Siberia, the logistics of opening a northern front with Japan made it prohibitive. The request for the consideration of a plan for going on the offensive from Alaska was likewise doomed. First, the strategic policy was one of defense in the Pacific and offense in Europe, and given that policy allocations would continue to be denied to Alaska. Second, as Marshall recognized, Alaska was far too difficult to get around in, much less wage war in, to be acceptable as a major theater of elective operations. Third, as Admiral Ernest J. King, Chief of Naval Operations and Commander of the US Fleet, pointed out, the facilities in Alaska already outstripped the ability of the military to staff, use and defend them, and that it was tactically unsound to develop facilities which could be used against US forces if seized by the enemy, which Japan would most likely do if provoked by an ill-advised advance (Draft History 1944:6). Buckner himself recognized the truth of this viewpoint when he stated of Fort Glenn, "the airfield is for use either by ourselves or the enemy, whichever gets there first" (quoted in Garfield 1969:75).

Buckner's approach in Alaska can be assessed as that of a commanding personality (his father was a Confederate general and US Senator, and he styled himself as the "Silver Stallion of Alaska") who was out to show that he personally could handle a tough job. He did not suffer fools kindly and was impatient with anything which got in the way of getting the job done as he saw it. He was very narrowly focused on the advocacy role for his own sector to the exclusion of the broader strategic view. While identification with and espousal of one's area of responsibility is a positive trait insuring maximum effort on its behalf, many of Buckner's actions bordered on presenting the War Department with fait accompli which would require that Alaska become a major

area of operations whether such was justifiable or not. In this he was abetted by General DeWitt. It may be argued that these commanders were trying to aggrandize the importance of their own spheres of responsibility. Such was not uncommon, as witnessed by the actions of MacArthur in the Southwest Pacific.

Now that the Eleventh Air Force finally had some planes, the problem became where to station them. If they were moved west to Aleutian or Alaska Peninsula bases, the core area would be left defenseless, but if they remained around Anchorage and Kodiak, they would be in no position to react to aggression elsewhere. The decision had essentially already been made to leave the Panhandle and Bering Sea on their own until it was demonstrated that they needed further protection. It was finally decided that if bases could be readied, fighters should be based in forward areas, with bombers staying in Kodiak. The completion of Cold Bay and Otter Point received the highest priority.

Originally, the runways were to have been paved. By this time, however, paving would delay the operation of Otter Point too long, so the ACOE began installing the first examples of Marsden matting. The first plane to land was a C-53 carrying Colonel Talley and General Butler on an inspection tour. Butler argued against the surface as inadequate for combat aircraft, but was overruled by Buckner. The last of the runway was laid on April 5, 1942, after round-the-clock shift work beginning in early March. Cold Bay was also barely operational by the end of April, 1942, with an asphalt runway surface (Cloe with Monaghan 1984:52-53). By the end of May, Fort Glenn had a garrison of about 4000, Cold Bay one of about 2500, and Fort Mears one of over 6000; most were engineering and support troops, but combat troops were present in significant numbers (Conn et al. 1964:258).

The Navy meanwhile had been at work trying to complete its main bases. It also set up two small outposts as weather stations and observation posts on Kanaga and Kiska. The weather in the Aleutians generally moves from west to east, so reports from farther out along the Chain should have allowed more accurate prediction. However, the warm Japanese Current meets the cold Bering Sea, complicated by the turbulence of upwelling from the Aleutian Trench, making Aleutian weather highly variable and localized. Weather prediction was not an art which did very much to help in the battle against the main enemy, the elements. ComAlSec was also building up its fleet, which had consisted of only the Captain's flagship and the YP, or "Yippee," boats: fishing boats painted gray, manned by Navy crews and lightly armed. By May, 1942, Parker had "two old destroyers, [two]...Coast Guard cutters, a few more converted fishing boats [YPs] and ten Catalinas - one each at Dutch Harbor and Kodiak, the others farther south. Flagship Charleston was the only one of these vessels equipped with sonar or with guns larger than 3-inch; both she and the cutters and destroyers were in constant use escorting freighters bringing construction workers and materials to the new bases and airfields..." (Morison 1949:165). Morison does note that the ships of the Royal Canadian Navy Pacific Command could be called on if needed.

Meanwhile, administrative activity and rear echelon construction was progressing as well. Plans were being considered for a Port of Entry (POE) at Excursion Inlet in the southeast. Auxillary airfields at Campbell Creek and

Palmer were cancelled (though eventually they were completed), and dispersion fields at Willow and Birchwood were ordered instead. Others would be built at Wasilla and Goose Bay. The AWS projects were still in the works and general construction and maintenance work continued. The ACOE opened a Real Estate Office in Anchorage to handle property transactions; before such transactions had to be referred to Seattle (Talley n.d.)

Another issue which occurred against this backdrop was the internment of Japanese-Americans. In the hysteria which followed Pearl Harbor, the traditional prejudice against Asians on the West Coast reached a fever pitch, so that in spring, 1942, the Secretary of War was given authority by executive order to exclude those of Japanese ancestry from military areas. Altogether, perhaps 120,000 US citizens and resident aliens were rounded up and relocated in camps in California, Nevada, Utah, Idaho and Arkansas. Their property was left under the stewardship of the Federal Reserve Bank, and they were allowed to take very little with them; many ended up losing most of their property. About 230 Alaskans, including Aleuts with Japanese surnames, were moved to the War Relocation Center at Minidota, ID, where they were kept for the duration of the war (Naske 1983).

The Japanese were also faced with a dilemma following their stunning successes since the Pearl Harbor attack. Since the opening of the China offensive in 1937, the Imperial Army and Navy had participated in an uneasy coalition requiring consensus for any decisions, military or political, and the Japanese Army and Navy had, if anything, an even more touchy relationship than their American counterparts (Spector 1985:49). The strategy favored by the Army was one of confining advances essentially to the Asian mainland, consolidating limited gains and negotiating a peace with the US and Britain while stopping short of actual engagement if possible. The Navy's policy, as developed by Admiral Isoroku Yamamoto, chief of the Combined Fleet and major strategist, was to strike rapidly, encompassing as much territory as possible, destroy the enemy will and ability to retaliate, and impose a peace from a position of strength and from a perimeter extended far enough from Japan to prevent a counteroffensive. Yamamoto realized that this was a gamble and that it had to succeed in the short-term, before the massive industrial capacity of the US could be brought to bear on resource-poor and overextended Japan. At Yamamoto's instigation, the Midway-Aleutians operation was reluctantly approved on April 14, 1942.

Though the operational end was complicated, the basic plan was simple: the Imperial fleet would launch a feint at the Aleutians, destroying any bases it could and seizing a temporary foothold in the western Aleutians. The US fleet would split its remaining forces to send reinforcements to the Aleutians. These reinforcements would be ambushed along the way, while the main Japanese force would concentrate on the remaining force at Midway and annihilate it in a classic set-piece engagement. Using the Aleutians as the northern anchor of a patrol line extending through Midway to Fiji, Samoa and New Caledonia, Japan would establish a perimeter which would hold back US advances as well as cut off Allied contact with Australia and the Soviet Union. The Midway operation could also be seen as the first step in an invasion of Hawaii. The psychological effect of the raid on Tokyo on April 18, 1942, by carrier-based bombers led by Colonel Jimmy Doolittle, a native son of Nome, only served to harden the Japanese resolve to carry out the operation which would theoretically prevent further attacks of this nature (Toland 1970).

On May 5, 1942, Naval Order No. 18 was issued, formally laying out the Midway-Aleutian campaign plan. Navy Directive No. 94, the Joint Central Agreement on the Aleutians, called for the Army to capture, demolish and withdraw from a supposed US base on Adak, then seize and hold Attu and Kiska until winter. The Navy would attack Dutch Harbor to destroy the facility and prevent reinforcements from reaching the outer islands. With the Battle of the Coral Sea in early May, 1942, at which the Japanese lost two carriers and sustained heavy plane and pilot losses on a third, the plan began to fall apart. The advance to New Guinea and Australia and the interdiction of the southern anchor bases was halted, and combat vessels were removed from operations. Nevertheless, the main plan proceeded, with the order for the Aleutian part of the operation being issued May 12, 1942. On May 20, 1942, Naval Force Order No. 245 established the staffing and assignments for the northern task forces. All together, there would be two small carriers, eight cruisers, 13 destroyers, three gunboats, six submarines, three transports, one oiler and one seaplane tender available to the four northern fleet task force units, as well as about 2400 troops, including 700 engineers. It was an impressive force compared to that which opposed it, and a force whose presence at the main event at Midway could possibly have swayed the outcome. The Japanese were woefully ill-informed about US dispositions in the Aleutians, despite the intelligence potential of their fishing fleets which had operated there for years (Alaskan king crab was originally known as Japanese crab). They expected to be met by cruisers and destroyers, major military installations at Dutch Harbor and Adak, and minor garrisons at Kiska and Attu. In reality, Dutch Harbor was a lightly defended forward base, with the only other naval installations being weather stations on Kanaga and Kiska. There were no fleet forces in Aleutian waters either. There were, however, unexpected airfields at Fort Glenn and Cold Bay.

One problem with the Japanese plan was that the US knew about it. Since 1940, naval intelligence had been able to read part of JN-25, or the Japanese Navy Purple Code, and by April, 1942, largely because with the pace of the Japanese advance the Japanese fleet could not keep up its schedule of monthly cipher changes and so continued to use the old codebooks giving the codebreakers more time to study it, "Station Hypo" at Pearl Harbor was able to read 10-15% of naval traffic. By late May, they would have 90% of the Midway orders decrypted (Spector 1985:157,168). Admiral King, chief of Naval Operations, directed Admiral Chester W. Nimitz, Commander in Chief of the Pacific Fleet (CINCPAC), to assign a task force under the command of an admiral to oppose the Japanese invasion in Alaska. Using the new Joint Chiefs of Staff arrangement (which had been adopted from the British model after Pearl Harbor), the Navy asked that the Eleventh Air Force be placed under the control of this admiral to better coordinate responses. According to the instructions of Admiral King, "the command relationship between... the remainder Army forces in Alaska and North Pacific Forces is to be by mutual cooperation" (quoted in Cloe with Monaghan 1983:58).

Task Force 8, Pacific Fleet, or the North Pacific Force (NORPACFOR), was assigned to Alaska under the command of Admiral Robert A. Theobald. The force consisted of two heavy and three light cruisers and 11 destroyers, with backup provided by 36 other vessels, including Parker's provisional "Alaska Navy." No aircraft carriers or Naval aircraft besides the PBVs on station were allotted, making Theobald dependent on the Army Air Forces for aerial coverage. When Theobald complained about force levels, especially in air

power, he was told that he was to "inflict strong attrition" upon the enemy with such forces as he had on hand, albeit he was advised to avoid battle if possible when the odds were unfavorable. The Alaskan forces interpreted this to mean that they were being abandoned to what could be a suicide mission: they were expected to fight to the last man without hope of reinforcement. They were essentially correct; although the assaults anticipated were unlikely to result in such a contretemps, the personnel in Alaska had no way of knowing this at the time. King and CINCPAC had decided to make only a token attempt in the Northern Pacific, concentrating their forces around Midway in hopes of inflicting on Yamamoto the kind of damage he had envisioned inflicting on them.

Despite the advance warning that US intelligence had given to the defenders, the US understanding of the Japanese goals and tactics was fuzzy. US planners assumed that the objective of the Japanese strike was to capture Dutch Harbor, neutralize (if they could not capture) the airfields at Fort Glenn and Cold Bay, and perhaps invade the mainland of Alaska (Conn et al. 1964:260-261). This posed a problem in the distribution of the limited forces which existed. Theobald distrusted the intelligence he had received regarding Japanese designs on the Aleutians, was new to the area (he had arrived at Kodiak on May 27, 1942), and had to make snap judgments based on limited data and supported by limited forces. His first order was that the Eleventh Air Force be deployed to the advance bases, which was done over the objections of General Butler, who argued that the bases were not ready and/or adequate for operations. The engineers meanwhile had received orders to prepare these bases for demolition should they be in danger of capitulation. His second was to devise a plan as complicated to execute as Yamamoto's for the defense of Alaska. Task Force Operations Plan No. 1-42 set up six different groups. The main group, under Theobald's direct command, with the cruisers and four destroyers would position itself 400 miles south of Kodiak. Theobald felt that the Japanese would try to decoy his ships into the Aleutians in order to bypass him and attack Dutch Harbor and perhaps even the mainland; at the very least, the Japanese would try to lure him into ambush, and he wanted to keep his options open and be able to respond from a central location. A second group of nine destroyers was sent to Dutch Harbor to guard against amphibious assault, though the force would be dispersed to Makushin Bay on the other side of the island to disguise its presence and thus be out of the action. An air screening group would fly offshore patrols to locate the Japanese fleet, operating from seaplane tenders at Cold Bay, Sand Point and Dutch Harbor, and supported by the Eleventh Air Force's heavy bombers (B-17, LB-30). A surface screening force -Parker's "Alaskan Navy" reinforced by six pre-war S-class submarines- would set up a picket line across the expected invasion route. The sixth group, the bombers, would close with the enemy and destroy his forces once they were located.

Butler and Buckner disliked the plan, but were unable to veto it. In addition, while Buckner and Parker had gotten along well, Buckner and Theobald took an immediate dislike to each other. Part of this was due to a clash of personalities -Buckner being a bluff man of action, while Theobald was a slow-moving by-the-book commander who saw three sides to every question- while part was Buckner's frustration at having his special knowledge and viewpoint on the military situation in Alaska superseded by that of the uninitiated. Finally, there was simple command jealousy between services and individuals.

At any rate, communication and cooperation was strained during Theobald's tenure.

On June 1, Theobald departed to take up station south of Kodiak. By that date, there were seven bombers and 17 fighters at Fort Glenn and six bombers and 16 fighters at Cold Bay, while the Navy had eight PBYs operating out of Dutch Harbor. Reinforcements were on the way to bring the air strength up to 10 heavy and 34 medium bombers and 95 fighters, all of which were earmarked for Elmendorf and beyond, since the RCAF had taken over responsibility for the Southeast bases with two fighter squadrons at Annette Island, and a bomber and additional fighter squadron en route to Elmendorf. The total Army strength in Alaska on June 1, 1942, was about 45,000, of whom about 13,000 were west of Fort Randall (Conn et al. 1964:261). There were 14 ADC posts extant, with more on the way.

2.3.2 Combat Operations (1942-1944)

The Japanese task force left port in late May, 1942, under the command of Vice Admiral Boshiro Hosogaya. The weather turned bad, and the task force steamed east following the storm, which made for rough travel but screened the ships from US reconnaissance patrols. In the early morning hours of June 3, 1942, the carriers Ryujo and Junyo, commanded by Rear Admiral Kakuji Kakuta, launched a strike force of Zeke fighters and Kate and Val dive bombers against Dutch Harbor. All of the Junyo force had to turn back and about half from Ryujo had to abort their mission because of weather and navigational problems, with approximately 14 Kates and three Zekes participating in the attack. The seaplane tender Gillis is credited with detecting the attack, and the base was at least partially ready when the enemy planes arrived. Dutch Harbor had actually been on alert for most of the month of May, and was well prepared with foxholes, pillboxes, and antiaircraft protection. The attack at about 5:45 AM was met by a barrage of ground fire as troops scrambled to positions and shelters and ships in the harbor tried to get underway. The result was full of sound and fury, but signified very little. The Japanese bombing was ineffective, though there were 88 casualties (31 dead, including a Siems-Drake-Puget Sound employee, and 57 wounded) (Draft History 1944:22). If the bombing was ineffective, so was the defense; though the Japanese pilots later remarked on the heaviness of the ground fire and two kills were credited to antiaircraft batteries, little damage was done to the attackers, who dropped their bombs and strafed at will for about twenty minutes. Fighters were scrambled from Cold Bay, but arrived after the Japanese had left. Because of a breakdown in the jury-rigged communications system, the fighters at Fort Glenn failed to receive word of the attack. One of the Ryujo pilots had spotted the destroyers in Makushin Bay, and a force was sent from the Junyo, but was unable to locate the target in the storm. Observation floatplanes stumbled on Fort Glenn, where fighters finally scrambled, downing one.

Word of the attack sent aircraft into the area searching for the Japanese fleet, but weather and communication problems were to conspire to keep its position secret. Kakuta withdrew according to plan, shifting course for Adak to bombard the supposed base there. The weather had deteriorated to such a degree that Kakuta broke off the effort and returned to Dutch Harbor for a

second attack on June 4, 1942. At about 4:00 PM, approximately 15 Zekes and 11 Vals attacked Dutch Harbor, causing considerably more damage but fewer casualties (two killed, four wounded) (Draft History 1944:22). Four oil storage tanks were destroyed as was a wing of the Navy hospital (which had been evacuated) and an antiaircraft position. The construction barracks ship Northwestern was also damaged, as was an uncompleted hangar at the NAS. The Japanese planes accidentally regrouped over Fort Glenn, which scrambled eight P-40s. Four Japanese planes and two US aircraft were shot down in the engagement. The field at Fort Glenn was named Cape Field after one of the US victims of the dogfight. The Cold Bay/Fort Randall field would be named Thornburgh Field after Captain George W. Thornburgh, who was lost after an abortive attempt to torpedo the Ryujo in one of the few contacts that US airmen were able to make with the Japanese fleet during the next few days.

Kakuta had received a signal from Yamamoto while the second day's attack was in progress ordering him to head south to join the main fleet in action at Midway. At Midway, Yamamoto was in the process of losing all four of his aircraft carriers with 332 planes and one-third of Japan's combat pilots and a total of about 3500 men, while the US would lose a single carrier. Yamamoto's initial reaction was to join his forces, using the relatively fresh northern force to cover his retreat. Hosogaya argued that the US forces were unlikely to be in a condition to pursue, that the defense of Japan's northern frontier was still a valid mission and, finally, that any victory would be better for propaganda purposes than the story of the smashing defeat at Midway. The story of Midway was to be kept from the Japanese public until after the war, but the invasion of the Aleutians would be heavily touted for domestic consumption (Toland 1970).

Based on his pre-raid reconnaissance which showed how lightly held it was, Kakuta had reportedly requested before the first day's attack on Dutch Harbor that he be allowed to sieze it with the troops slated for the battle at Adak (Garfield 1969:9). The request was denied as it would deviate from the plan and besides the base was too far away from Japan to be supplied and defended. Now, even Adak seemed too close to Dutch Harbor and Fort Glenn for comfort. It was bypassed in favor of concentrating on the western islands, Kiska and Attu. In a dawn assault on June 7, 1942, 1200 troops captured Kiska with its nine-man Navy weather team (a tenth man would stay in hiding for over a month). Another 1200 troops occupied Attu the same day, seizing 43 Aleuts and the community's teacher; her husband was either killed or committed suicide (there are conflicting stories) and, aside from superficial wounds suffered by two of the Kiska team and one Aleut on Attu, was the only casualty in the two invasions. The victory was indeed small. The US did not even miss the islands until a reconnaissance flight on June 10 noted the Japanese ships in the harbor.

The Battle of Dutch Harbor, the first engagement of the war in Alaska, had ended in a draw. Dutch Harbor was relatively unscathed, the main loss being the fuel that went up when the storage tanks were bombed. Including air crews lost to enemy action and misadventures in the course of the operation, 78 US personnel were killed. A total of ten US aircraft were lost, while the Japanese lost an estimated ten planes as well. No shipping was lost on either side, though the US claimed several sinkings. The US also claimed that it had

disrupted a Japanese attempt to occupy Dutch Harbor and perhaps the Alaskan mainland as well (Draft History 1944:34). In reality, the Japanese had never intended to occupy any territory other than the western Aleutians (and those only temporarily). The Japanese had simply sought to neutralize US forces in the Aleutians in order to secure their perimeter. While it was part of a larger strategic endeavor, the Aleutian portion of the campaign was nothing more than a reconnaissance in force. It did, however, leave the Japanese in possession of what could be considered part of the North American Continent and the US with a problem. The problem was more a public relations than a strategic dilemma, although this was not necessarily apparent at the time.

One sidelight to the operation was the recovery of a A6M2 Reisen (type Zero) after the raid. Flight Officer Tadayoshi Koga's aircraft was damaged by ground fire in the June 4 attack. Koga diverted to Akutan for an emergency landing and to await pickup by submarine. Instead of ditching, Koga attempted a wheels-down landing on what appeared to be smooth ground. The landing gear caught in the muskeg, the plane flipped over and Koga's neck was broken. The wreck was spotted July 10, 1942, salvaged (Koga's body being buried nearby), and shipped to San Diego NAS, arriving August 12, 1942, where it was repaired and tested. Garfield (1969) among others has stated that these tests helped in the design of Navy planes which bested the Zero in combat later in the war. Both the F4U Corsair and the F6F Hellcat were already in the test stage and ready to go into production when the Akutan Zero became available. Testing may have helped establish operating characteristics for tactical instruction, but could not have aided in design of equipment. The aircraft in use by the US at the beginning of the war were definitely inferior to the Japanese Zero with its higher rate of climb, general speed, maneuverability, armament and greater range, although other aspects such as the lack of self-sealing gas tanks, lack of protective armor, and a high requisite level of pilot skill, limited its effective superiority. The P-36, fortunately, was replaced before being required to enter combat in Alaska, although four Hawks got off the ground at Pearl Harbor, with at least one being credited with a kill. While the P-40, P-38, P-39 and F4F were slower and less maneuverable, they did have the advantage of more pilot protection and fuel capacity. The tactics which allowed US pilots to hold their own against the Japanese involved twin team attack plans by P-40s and diving attacks by P-38s. These tactics were developed on an ad hoc basis in combat rather than in exercises and test performances.

Because of the distances involved, Dutch Harbor had been on its own during the raids. Army and Navy headquarters had been informed of the attack, but could do nothing about it. This was especially true in the case of the Navy. Once Admiral Theobald's force had set out from Kodiak on June 1, radio silence was maintained, so that the commander of the operation was out of contact with his command. On June 5, he returned to Kodiak to assume direct command. One erroneous report had located the Japanese fleet in the Bering Sea, and Theobald, with the backing of Nimitz, ordered all available planes to the area and followed himself in his flagship, the cruiser Nashville. A flight of B-17s newly arrived on the scene located what they thought was the Japanese fleet and proceeded to bomb the Pribilof Islands. After a further comedy of errors, Theobald returned to Kodiak on June 10 to reports that the fleet had

been located in the harbors at Attu and Kiska where the Japanese had taken up residence.

An immediate counterattack against Attu and Kiska was considered, but it was decided that while available forces might be able to recapture the islands, shipping and air support was inadequate to secure, supply and relieve the garrison (Draft History 1944:49). Buckner and DeWitt pressed for an invasion, calling for the use of Navy forces from Pearl Harbor to force the issue in Alaskan waters, but the Navy's restraint and the fact that the Army was forced to depend on Navy ships to mount any offensive killed a quick counterstroke (Conn et al. 1964:265). Theobald, acting on orders from Washington (emanating ultimately from President Roosevelt) that the Japanese be dislodged from Attu and Kiska, did order bombardment by all available aircraft. The seaplane tender Gillis was dispatched to Atka to service PBVs, while the Eleventh Air Force bombers were dispatched from Fort Glenn and Cold Bay in what became known as the "Kiska Blitz." The distance from Fort Glenn to Kiska was 600 miles, antiaircraft fire over the target was intense, and the weather was abysmal everywhere. During operations in June and July, the Army was only able to locate the target about half the time. Colonel William O. Eareckson, commander of the Army bomber forces, tried several tactics. Conventional mid-altitude bombing invited AA fire, while high-level bombing from above 10,000 feet was ineffective. Eareckson had his men try fighter-style, deck-level bombing to confuse gunners and the success rate went up, but batteries soon learned where the approaches would be made and laid their guns appropriately. The Navy tender meanwhile ran out of supplies and was threatened by attacking Japanese float planes. It withdrew, taking with it the residents of the Aleut village on Atka.

At the time when General Buckner had ordered military dependents out of Alaska, concern was expressed about the presence of civilians, especially Native Americans, in potential combat zones. While responsibility for the protection of the civilian populace rested with the Army, responsibility for Native Americans lay with the Department of the Interior, where responsibility was further split among the Fish and Wildlife Service, the Bureau of Indian Affairs and the Division of Territories and Island Possessions. Coordination was not achieved among the various agencies, leaving the military to act on its own without adequate preparation (Commission on Wartime Relocation and Internment of Civilians 1982). During April and May, 1942, debate went on in the Interior bureaus, the Navy and the governor's office over the appropriate policy. Interior Secretary Ickes supported the position of the Commissioner of Indian Affairs, John Collier, and Governor Gruening that natives should be left alone unless they asked to be evacuated. The Navy stated that it lacked the ships to effect an evacuation.

Despite the opposition of Gruening, Buckner and Ickes, it was decided after the Battle of Dutch Harbor that the Aleuts had to be removed from the war zone. The evacuation was accomplished as a side-issue of a military operation and did not take into account the wishes or sensibilities of the evacuees. On June 13, 1942, the Gillis officer summarily ordered the Atka Aleuts aboard without time to collect possessions and set fire to their village to deny its use to the supposedly advancing enemy, before retiring to Dutch Harbor. The

Navy also removed the Aleuts from the Pribilof Island villages of St. Paul and St. George by June 22nd. The remaining Aleuts from Akutan, Nikolski and Unalaska were collected at Dutch Harbor, from where they were transhipped in late June, 1942, to camps in the Panhandle. Non-natives at Unalaska were not evacuated. Ironically, planning for the removal and internment of the Japanese and Japanese-Americans in Alaska was more precise and efficiently executed.

The preevacuation warnings of permanent damage to Aleut culture and to the physical and mental health of the evacuees proved accurate. The Aleuts were hastily resettled in dilapidated canneries at Ward Lake, Killisnoo, Burnett Inlet and Funtier Bay in Southeastern Alaska. The culture and expectations of the various Aleut groups was very different, and some groups thrown together were traditional enemies. The problems of living in the camps were exacerbated by lack of facilities, transportation, building materials, household goods, employment opportunities and enforced idleness. Added to the deprivations caused by abrupt removal, loss of personal possessions, and general disruptions were the problems of adjustment to a new environment. Aleuts reported that temperatures were uncomfortably warm and that the thick southeastern forests made them claustrophobic (Cuttlefish Five 1981). Disease, especially upper respiratory maladies, was common, as was malnutrition.

Despite good intentions, the Interior officials supervising Aleut camps became virtual jailers. An enumerated 881 Aleuts were removed and relocated by July, 1942. Although danger to civilian populations was over after the recapture of Attu and Kiska a year later, the Aleuts remained in the camps until 1944-1945 (Gable 1980). Secretary of the Interior Ickes and Secretary of War Stimson realized that continued refugee status was undesirable, but for lack of transportation and the difficulty of returning them to their proper homes (many of which no longer existed due to looting and appropriation by US and Japanese military personnel), the Aleuts were forced to remain where they were (Kirkland and Coffin 1981).

When the Japanese overran Attu, they captured 43 Aleuts at Chichagof. These individuals were shipped to Japan as prisoners of war (or "captive guests" in Japanese parlance) in September, 1942, where they were interned at Otaru until September, 1945. They were "allowed" to perform menial jobs under minimal supervision, but had little in the way of food, supplies or freedom of movement (Cuttlefish Five 1981). Only 25 survived, most dying of tuberculosis.

A factor in the decision not to attempt an immediate counterinvasion of Attu and Kiska was the concern that the Japanese had used the Dutch Harbor sortie as softening up and cover for a larger scale invasion of either Siberia and/or the islands and coast along the US side of the Bering Straits. Army Chief of Staff Marshall purportedly personally ordered that the Nome garrison be reinforced to counter this supposed threat (Conn et al. 1964:264-265). Operation Bingo, the first massive tactical wartime airlift of personnel and materiel, began on June 21, 1942. Using military transport plus 40 impressed commercial planes (Stinsons, Bellancas and Ford Tri-motors among others), a total of 55 aircraft flew 218 trips over 18 days. In all, 2035 troops and 883,727 pounds of equipment and supplies were airlifted to Nome (Draft History

1944:43). Additional supplies were sent by sea from Seward. A garrison of 1400 was also authorized for Fort Morrow to protect the airfield at Port Heiden. An Army intelligence-gathering force was also established on St. Lawrence Island and a Signal Corps listening post was set up on St. Paul in the Pribilofs (Conn et al. 1964:264). Helbock (1977) reports that National Guard personnel were sent to the Pribilofs with orders to defend the islands in case of a Japanese invasion, destroying the seal rookeries if necessary to keep them out of enemy hands. By early July, the atmosphere of hysteria had died down and the bombing of the Japanese bases settled into a routine. The Japanese, on the other hand, began to dig in, reinforcing the bases with float aircraft. They also began to construct runways, though these attempts were hampered by the lack of heavy equipment and the constant, if ineffective, US bombardment.

Elsewhere, the buildup continued, with resources freed up by the supposed threat posed by the Japanese occupation of Attu and Kiska and by the fact that once in the pipeline, projects took on a life of their own, moving inexorably towards completion despite intervening changes in emphasis. Like the CAA airfield at Port Heiden which was garrisoned during the Nome invasion scare, many other CAA fields, as per the original defense plan, had garrison facilities prepared during 1942. Construction at Bethel was limited by the fact that all material had to be lightered and barged up the Kuskokwim River which was usually frozen and experienced 21 foot tidal bores when it wasn't. At Gulkana, the ACOE, plagued with permafrost construction problems, finally settled for installing mudsills at grade for structures to rest on, anchoring them with three foot posts. Projects also proceeded at Big Delta, Northway, McGrath, Moses Point, Galena and Tanacross during the summer and into the winter of 1942 (Bush 1944).

Somewhat behind the march of events, though this could not be known at the time, came the rush to construct shore and harbor defense installations. Facilities included concrete battery emplacements, gun mount plugs, underground, bombproof magazines, fire control stations (battery and group commander's stations and base end stations, with communications supplied by the Signal Corps), searchlight and power stations, observation and control posts, seacoast radar facilities, and a variety of other emplacements. Kodiak was to be the most elaborate, with Sitka a close second. The former had two 8-inch naval and one 6-inch batteries while the latter had three 6-inch naval gun batteries; Dutch Harbor was to have one 6-inch and one 8-inch battery. Six inch guns were also installed at Annette Island, Yakutat, Cold Bay, Chernofski, Umnak and Nome. In all, 15 projects for 155 mm rifles with Panama mounts were authorized; 72 were to be constructed by the end of 1943 (Bush 1944).

Gun emplacements were constructed by civilian workers at most stations. Siems-Drake-Puget Sound was the contractor at Sitka, Kodiak and Dutch Harbor installations, with other contractors handling the limited work at Annette Island and Yakutat. The ACOE, with the West Construction Company, did the work at Seward, which was the most difficult artillery construction of the war. Seward was still the main POE for Alaska in Summer, 1942, and needed protection. There was little room in the area for air facilities, and Elmendorf was too far away to provide much support. The harbor at Seward,

however, was extremely rugged and a militarily appropriate siting of ordnance with full coverage and support facilities led to major construction headaches. Construction needed to proceed on virtually all sites simultaneously, but the difficulty of access prevented much sharing of equipment or facilities. Separate facilities were finally constructed with batteries at Caines Head and Rugged Island, searchlights and fire control stations at Rocky Point, Topeka Point, Carol Cove, Chamberlain Point, Barewell Island and Alma Cove, and seacoast radar emplacements at Patsy Point and South Beach. Housing, communications lines, plus docks and wharves also had to be built (Bush 1944). Despite this concern with Seward, Whittier, which was much more important, was never defended, probably due to the fact that by the time it was completed, the danger of enemy attack was considered too remote and the time frame for construction too extended to justify the expenditure.

Work had also proceeded on improvements at the Juneau POE, but the main effort went into the construction, from scratch, of a major POE facility at Excursion Inlet. There were inadequate port and staging facilities in Alaska, and the possibility of mounting a major North Pacific invasion of the Orient required the development of extensive facilities. This was proposed, surveyed and approved prior to the attack on Dutch Harbor, and active construction began in August, 1942, with the Guy F. Atkinson Company as contractor. Three docks, two sawmills, and a variety of warehouses, port and other support facilities were ultimately built. The construction force grew to a peak utilization of 3610 in early 1943. The existence of the base was considered a security matter, and construction was kept secret (Bush 1944; Woodman 1985).

Other rear echelon supply projects were also underway by the summer of 1942. The isolation of Alaska, which was proving to be such a problem under war conditions, had been recognized since the area was prominent during the Gold Rush. A land route through Canada had been proposed since before World War I, with engineering commissions declaring it feasible; however, as late as 1938, "from a practical standpoint, the military value of the proposed Alaska Highway is slight" (Hulley 1953:339). With establishment of US-Canadian defense accords came the founding of the Northwest Staging route, with airfields at Fort St. John, Fort Nelson, Watson Lake and Whitehorse in Canada and Northway, Tanacross, Big Delta and Fairbanks in Alaska. In January, 1942, Roosevelt had appointed a cabinet committee to assess the advisability of developing a complementary road; the committee, in concert with the War Plans Division, recommended immediate construction to forestall the possibility of naval interdiction of supply routes. The ACOE was to construct the initial pioneer road, with the Public Roads Administration following along to improve and surface it. US approval came in February, with Canadian approval following in March, 1942.

Work began in Spring, 1942, at three separate points along the route: Dawson Creek, Whitehorse and Big Delta. Seven engineer battalions, three of which consisted of black construction troops set to work, with materials coming from Edmonton or Skagway, via the Yukon & White Pass Railroad. The engineering and logistics problems were staggering, with cold weather always a complicating factor. Permafrost, muskeg, shifting riverbeds, glacial gravels, and a high water table caused major problems. Intercepting ditches were required on the uphill side of the roadbed for drainage. It was necessary to strip, thaw,

settle and consolidate the roadbed before grading and surfacing. Solifluction (freeze-and-thaw slippage) disrupted roadbeds, and inadequate "seasoning" of the bed prior to finishing caused much work to have to be redone. Bridges and culverts were constructed from native timber, with stream control revetting (using brush wrapped in chickenwire and weighted with stone) taking up significant time and effort. Still, bridges were washed out with some regularity, and roads sank into the muskeg during the thaws. In all, 133 bridges over 21 feet in length were built and over 800 culverts were installed. These timber features were eventually replaced by steel span and pipe structures, so that little of the original road remains. Subsidiary roads were built (Chitina Cutoff, Slana-Tok Cutoff, Slana-Nabesna Road, Glenn Highway, Steese Highway and Elliot Highway) during the course of the war, but the initial blazing of the ALCAN was the most impressive and significant project, though it was of little actual importance for supply. The Signal Corps also installed a telephone line along the length of the ALCAN, requiring repeater stations at 100 mile intervals. The 1400 miles of road employed roughly 11,000 troops and 16,000 civilians. It was substantially complete by winter, 1943 (Dod 1966:299f; Draft History 1944:299; Cohen 1981:16f). The achievement rivaled, and many would say surpassed, that of the construction of the Ledo Road from Assam to China as the major overland building project of the World War II era.

The assurance of a secure supply of fuel to ALCAN and Northwest Staging route traffic as well as for military and civilian use in Alaska was a critical concern from early in the war. The vast distances and requirements for transport and heating, plus the uncertainty over the integrity of sea routes, mandated the development of an internal supply and distribution system. The Imperial Oil Company, a Standard Oil subsidiary, had drilled the first well at Norman Wells on the MacKenzie River in the Northwest Territories in 1920. By 1940, three wells were producing 800 barrels a day during the short summer. In early 1942, the ACOE was assigned to develop the reserves at Norman Wells by drilling at least nine new wells to boost production to at least 3000 barrels a day. The ACOE was also to construct a pipeline transport and distribution system, with service road, across the Continental Divide to a refinery at Whitehorse, which it would also construct, a distance of 500 miles. This was to be accomplished by October, 1942 (Dod 1966). Civilian contractors began construction in May, 1942. Imperial Oil would drill the wells, Sverdrup & Parcel and J. Gordon Turnbull provided architectural and engineering services, and W.E. Callahan Company (Dallas, TX), H.C. Price Company (Bartlesville, OK) and W.A. Bechtel Company (San Francisco, CA) performed actual construction, along with ACOE unit personnel.

After Dutch Harbor, the CANOL project, as it was dubbed, increased in scope and ambition, despite opposition by figures such as Interior Secretary Ickes, who argued that it was impractical and a boondoggle. CANOL 1, the main pipeline from Norman Wells to Whitehorse plus the associated support facilities, oilfield development and refinery, was to be increased to include CANOL 2, a pipeline from Whitehorse to a Skagway ocean terminal, which itself was extended to CANOL 3 and 4, pipelines running from Whitehorse south to Watson Lake and north to Fairbanks along the ALCAN Highway. In September, 1942, the Transportation Corps, noting that if Alaska were to be used as a springboard for an invasion of Japan more petroleum supplies would be

required, suggested a wildcat drilling program be instituted to expand reserves. The Noble Drilling Company (Tulsa, OK) was contracted to put in 100 wildcat wells. With the war situation grim, it was decided to proceed with the CANOL Project at speed, with all work orders to be completed by December, 1943 (Dod 1966).

The problem of supply of strategic supplies, such as aviation and regular gasoline, was a continuing problem in Alaska. As of June, 1942, there were fuel oil storage and refueling facilities for shipping at Dutch Harbor, Kodiak and Seward, with tankers also stationed at Kodiak for mobile refueling missions, and aviation gasoline storage facilities at Fort Glenn, Dutch Harbor, Cold Bay, Kodiak, Seward, Anchorage and at the airfields along the Northwest Staging route (Draft History 1944:36). Capacity of facilities as well as limited availability both of facilities and supply were a major logistics problem. Construction of depots was undertaken at Fort Glenn, Fort Richardson, Ladd Field, Cold Bay and Nome. Storage tanks were of a standard size and configuration, fabricated in sections elsewhere and assembled on-site. Welded steel tanks in 25,000 and 50,000 gallon sizes, 50, 5000 and 10,000 gallon bolted steel tanks, woodstave reinforced deisel tanks and POL (petroleum-oil-lubricant) 50 and 55 gallon steel drums were used, with reinforced concrete tanks being constructed at Fort Richardson. Each depot had from one to 125 tanks. Larger projects used 3-12 inch pipelines (standard to light spiral welds, Dresser couplings) with gravity feed distribution (Bush 1944). The problem of fuel supply at forward and remote bases was solved by pumping directly from POL drums. These could also be unloaded from shipping directly into the surf at the correct tide to be floated ashore by wind and wave action. POL drums were designed for one-way transport, with no thought given to recovery of the empties (Talley n.d.).

In December, 1941, the US and the Soviet Union had signed a protocol agreeing for the provision of Lend Lease aid to the USSR. After a series of contretemps, arrangements were made for the transfer of war materiel. The Soviets' primary request was for aircraft, since most of their air force had been destroyed in the initial German advance. They initially wanted to receive these planes using a South Atlantic ship route, around Africa, to the port of Basra in Iran, from which they could be flown across Central Asia. The alternate was the North Atlantic convoy route to Murmansk and Archangel. The Atlantic routes were unattractive because of German U-boat activity and, in the southern route case, distance. Roosevelt proposed a route through Alaska and across Siberia. This proposal was rejected by the Soviets; the weather was too bad and the facilities too poor, nor did they want Americans spying on their installations or the Japanese upset by dealings on-site with belligerents. However, agreement was reached in May, 1942 on the Alaska-Siberia (ALSIB) route due to the shorter distance, Soviet desperation, and US insistence, and a ferrying group was activated at Great Falls, MT, in June, 1942, to set up the route.

After being delivered to Great Falls, where they were outfitted and had the Red Star insignia painted on, aircraft were to be flown along the Northwest Staging route through Canada to Ladd Field in Fairbanks, where they would be checked out and turned over to Soviet pilots. Transfer was to be handled at Ladd rather than at Nome, 500 miles closer to Siberia, because it was feared

that Nome was too vulnerable to Japanese attack. The first Soviet personnel arrived in August, 1942, with the first transfer taking place in September. Only 148 aircraft were handed over in 1942, one-third of the established goal, however, this level would increase to 2662 in 1943, 3164 in 1944 and 2009 in 1945, for an ALSIB route total of 7938 by war's end. The aircraft transferred were P-39s, P-63s, A-20s, B-25s, P-40s, P-47s, AT-6s and C-46s and 47s. The Soviets reported a loss rate of 0.2% (only about 16 aircraft) on their portion of the route from Ladd Field across Siberia, while the US ferrying group reported a loss rate of 0.5% from Great Falls to Ladd (a total of 40 aircraft). The Soviet facilities at Ladd were separate from the US facilities, and there was little fraternization. In addition to this aloofness, the Soviet mechanics would reject aircraft on the slightest pretext, causing a heavy workload and resentment among the US mechanics who had to bring the planes up to acceptable standards. The Soviets did spend a lot of time shopping for luxury goods, mostly women's articles and jewelry, in Fairbanks, which they crammed into their aircraft for the trip home (Cloe with Monaghan 1984:149f; Heck 1958; Cohen 1981:44f). It is also alleged that the Soviets used the ALSIB route to funnel in spies and to take out military intelligence and sensitive items under the cover of diplomatic immunity (Jordan 1952). A temporary transfer route for the delivery of seaplanes would be set up in 1944. Running through Kodiak to Nunivak Island, it then led to Anadyr and on to Magaden; only some 30 PBYS and PBNs were flown over this short-lived route (Cloe with Monaghan 1984:154; Kodiak History 1944).

Russian shipping also ran along the the coast of Alaska from Seattle, passing through Unimak Pass east of Dutch Harbor on its way through the Bering Sea to Petropavlovsk and Vladivostok. There was poor communication and monitoring of this traffic, and Soviet vessels often put into Dutch Harbor for repairs and refueling. As the war progressed, there were inadequate facilities to handle this traffic, nor space to stock coal (the Soviet freighters were largely coal-burners, while the US fleet had converted to oil and had no need for coaling facilities). In October, 1942, the Navy set up a coaling and repair station for Soviet marine traffic at the old whaling station and Aleut village at Akutan. Perhaps 150 watercraft of various types were transferred to the Soviets in Alaskan waters as part of the Lend Lease program, mostly at Cold Bay (Helbock and Dimpsey 1978). Almost all were transports, though near the end of the war, subchasers, mine-sweepers and patrol craft were also transferred. Most voyages to the US were made with empty holds, but Cold Bay was used as a stockpile point for Siberian lumber delivered in token payment for Lend Lease goods (Bush 1944).

In 1942, while there was still concern about the strategic importance of Nome and the hope that the USSR might enter the war against Japan, a number of surveys were ordered to assess the feasibility of opening routes in western Alaska. Reconnaissances were made for road and/or railroad routes west from Fairbanks during the spring and winter of 1942, down the Tanana and Yukon Rivers to Norton Sound and to Kotzebue Sound via the Tanana, Tozitna, Alatna and Kobuk Valleys. Preliminary routes were chosen, but no action was taken. The Seward Peninsula was also surveyed for a deep water port, with Moses Point, Golovin Bay and Port Clarence being the only sites found with any harbor potential (Bush 1944). Small facilities would ultimately be set up at

Moses Point and Port Clarence. Airfield surveys were also undertaken at Strawberry Point (west of Juneau), Kougarok (inland from Nome) and Quinhagak (north of Bethel), but no action was taken on development of any of these sites. Action was, however, taken regarding another series of airfield reconnaissances in the Aleutians (Bush 1944).

In late June, 1942, Brigadier General Laurence S. Kuter of General Arnold's staff, made an inspection tour of Alaska, declaring it to be a low priority theater. In early July, 1942, the Joint Chiefs of Staff decided to undertake a limited offensive in the south Pacific, meaning that no reinforcements could be expected for Alaska (Conn et al. 1964:265-266). The subsequent battles in the Solomons, New Guinea and at Guadalcanal in particular kept the attention of higher commands for the rest of 1942. In late July, General Arnold came out against sending more aircraft to Alaska since there were few enemy aircraft to engage, bombing there had proved relatively ineffective and there was such a high attrition rate among aircraft and crews (Cloe with Monaghan 1984:86-87).

General Buckner had been pressing Admiral Theobald to take some action against the Japanese in the Aleutians besides the ineffectual bombing, though Theobald had rejected what he considered to be rash appeals. He did attempt to bring naval power to bear on the enemy by shelling Kiska. Theobald led a fleet of four cruisers and nine destroyers out of Kodiak on July 18, 1942, with the object to harass Kiska. The fleet ran into bad weather, and four of his ships collided in the fog. Theobald returned to base in August without having fired a shot. Theobald was upbraided for leaving his headquarters, and turned the tactical command of his vessels over to Rear Admiral William W. "Poco" Smith with orders to try Kiska again. On August 7, Smith's forces bombarded Kiska with high explosives for seven minutes with little effect (Garfield 1969:143-145; Morison 1951).

The Army had ordered a reconnaissance to find a suitable site for an airfield within effective striking distance of Kiska. Over the summer, Colonel Talley had made two trips, choosing Tanaga, 200 miles east of Kiska, as the optimal location for an airfield. DeWitt proposed the occupation of Tanaga, but Theobald countered that Adak, 50 miles east of Tanaga, should be the site. The decision went to the Joint Chiefs of Staff for resolution. Tanaga was initially confirmed, but Theobald argued that there was no harbor at Tanaga, while Adak possessed natural harbors as well as flat ground for an airfield. The Joint Chiefs finally supported the Navy's position, whereupon the Army grudgingly agreed to Adak as the only way to get action out of Theobald. It was during this period of Army-Navy tension that Buckner read a poem in the officers' club at Kodiak which satirized Theobald's cautious nature. Theobald fired off a protest to Admiral King, who took up the matter with General Marshall. Buckner narrowly escaped being transferred out of Alaska as a troublemaker, though just who saved him is subject to dispute (Cloe with Monaghan 1984:84; Conn et al. 1964:266-267).

On August 17, 1942, a Congressional investigating committee led by Senator Albert B. "Happy" Chandler, chairman of the Military Affairs sub-committee, visited Dutch Harbor and Kodiak. It happened to be sunny that day, and

Chandler came back scoffing about the problem of fog and weather in the Aleutians. He also, however, recommended a unity of command for Alaska and that the territory be given more authority and Alaska more personnel and supplies. Little came of the visit.

Another incident occurring on August 30, 1942, was the sinking of the seaplane tender Casco by a Japanese submarine, the RO-61, in Nazan Bay, Atka. The Casco was salvaged and repaired afterwards, while PBVs and the USS Reid sank the submarine, capturing five prisoners, the first Japanese prisoners of war in Alaska.

What was known as the "Umnak Dispersal," the occupation of Adak (the island itself was codenamed "Fireplace,") began August 26, 1942, with the landing of Castner's Alaska Scouts to check for enemy forces. None were present, and on August 30 a force of 4500, led by Brigadier General Eugene M. Landrum, began landing. The primary reason for a base at Adak was the construction of an airfield, which the Army had anticipated would take two to three months. However, a survey of Sweeper Cove suggested that a field could be built on the tidal flats with minimal surface preparation if a dike were constructed to control the tidal flow. A field was operational within two weeks after the initial landing. On September 16, 1942, a force occupied Atka, east of Adak, and began building an emergency landing strip and establishing a small garrison. While Adak became the largest base in the Aleutians, Atka suffered neglect. Supplies destined for Atka were transshipped at Adak and never arrived. The scarcity of supplies and transport in the Aleutians led to pilferage, unofficial "requisition," and the motto, "God helps those who help themselves" (Signal Corps History - Atka 1944). An airfield was also established on St. Paul in the Pribilofs, but that base was soon abandoned.

The move to Adak points up the changes in construction which had come full circle since the initial phases of the buildup. The construction of mobilization buildings - permanent structures with wood framing requiring skilled building trades labor to erect - and permanent barracks - involving reinforced concrete and steel - such as had been put up at Ladd Field, Fort Richardson, Sitka, Kodiak, Dutch Harbor and Seward was a thing of the past. Beginning in December, 1941, the military had begun to requisition prefabricated shelter types which were quicker and easier to erect. CCC type buildings - prefabricated sectional wood panels with tarpaper roofs and drop siding - and theater of operations (T/O) buildings - prefabricated structures in standard 20 foot widths with sectional extensions up to 120 feet long - were still set up at larger bases, mostly in the rear echelons, but most new construction was modular in nature. The first housing that many troops saw were Army winterized tents. These were 16x16 foot canvas duck pyramidal tents with a wooden floor and sides and frame designed to accomodate a central Sibley coal stove. These structures were barely adequate and tended to blow down in Alaska's high winds, yet they did provide minimal housing for troops while other structures were being put up.

The main types of modular buildings used in Alaska were the Quonset and Pacific Huts. The former, designed by the Navy, consisted of a half-cylinder profile structure with a steel frame and corrugated sheet steel siding; there was essentially no foundation, and the wooden flooring was designed to rest at

grade on a light framework. Composition board insulation and interior finishing was provided. Quonsets were designed in either 16x36 or 24x60 foot modular units (the larger size was equipped with gabled windows). They are said to have an air and water gap between the roof and end joints, and used almost 100% strategic materials (steel). The Pacific Hut was the Army's answer: a sectional hut in 16x36 foot units, consisting of laminated plywood (Masonite) sides on an arched steel frame, using only 7 percent strategic materials with the rest common wood products found in the Pacific Northwest, where the huts were manufactured. The Pacific Huts were cheaper, lighter and easier to set up, but seem to be less durable once erected. Both types, especially Quonsets, were commonly dug in so that the roofline was near ground level. The excavated earth was either revetted around the structure or actually packed in around it. This was to present a lower profile for wind and as protection from enemy ordnance damage and/or insulation. A further variation on the same theme was the Jamesway Hut, a 16 foot wide hemispherical structure in eight foot lengths with a wooden floor and a laminated hoop frame designed to be covered by rubberized canvas. The Butler building and British Nissen Hut were similar building types, references to which also occur in the literature about Alaska in World War II. Utility structures used in the Alaska theater include the Yakutat Hut, a wooden frame modular structure with prefabricated wall sections in 16x16 foot units, described as a shack that could double as a chicken coop, and the Stout House, a 12x16 foot box with composition board panels. The Stran Steel Hut was also used; it came in 20x48 and 40x100 foot units (Bush 1944; USN 1952). Many of these structures came prepackaged with all necessary sections, hardware, fittings and wiring, though package units often arrived in a scavenged state with critical parts missing. There was also general agreement in Alaska that the Navy was better at plumbing, while the Army was better at wiring. Interservice rivalry was often breeched by low-level pacts to fix up the other's quarters with the "specialty of the house."

Warehouses, mess halls, repair shops and other non-housing structures included many of the same types, but on a larger scale. Reinforced concrete and mobilization style (60x153 feet standard wood frame construction) were restricted to the early buildup bases, though once a base had become established, it tended to acquire more elaborate "public" architecture, like T/O buildings (standard - 20 feet wide by 60-180 feet long - and heavy - 50 feet wide by 150-180 feet long wood frame and prefabricated tarpaper siding) and CCC buildings (knockdown portable, prefabricated panel construction). Loxstave buildings (prefabricated wooden structures with an interlocking "log cabin" corner joint), transit shed type structure (timber frame set in a concrete slab foundation, usually 181x400 feet), and various "elephant" Quonset and Butler Hut structures were the most common. The Cowin Hut was used, but discontinued in 1943 as inadequate. Cold storage used liquid freon, except for ammonia units at Fort Richardson and Ladd Field (Bush 1944).

Modifications had to be made to take the harsh conditions into account. After the initial battles with headquarters in Seattle, there was more freedom and local authority in constructions, and gradually standard structure design became more responsive to local needs. There was little concrete work, including foundations, at forward bases. One reason was the difficulty of construction on permafrost and tundra, which afforded little in the way of a

stable foundation. Even "floating" on-grade construction could be damaged by frost heaves. Vestibules had to be added where there was a need for a "cold lock" (a feature known to Eskimo builders) and/or a drying area where outer clothing could be removed and dried. "The thicknesses of structural members had to be increased, additional bracing put in, diagonal sheathings applied and the distance between studs narrowed to reduce the possibility of damage from the wind" (Dod 1966:297). Wooden or other siding had to be added to protect the usual tarpaper siding from being torn off by the wind. Vapor barriers were needed to prevent rot from high humidity. Air exhaust units and special chimney caps were also needed to prevent fires. The difficulties inherent in living under these primitive conditions in Alaska could lead to lack of shelter in sub-zero weather. For example, in January, 1943, warehouses at Yakutat collapsed under 27 inches of snow, and there were 17 major fires reported between November, 1942, and January, 1943 (Talley n.d.).

Special modifications of equipment were also required to undertake construction. The workhorse of the theater was the Caterpillar tractor. Models D4, D6 and D7 were used as small dozers and to pull trains, while the larger D8s and RD8s were heavy construction dozers and traction units. They could be mounted with bulldozer (straight/angled) and scraper blades and with traction hitches for trailers or cable plows, among other uses. International (the TD series) and Allis-Chalmers tractors were also used, but were less common. The Snogo (TU3 and LTR) was also used for plowing and traction. The "cats" primarily pulled the Athey trailer, a tread-mounted platform which could be loaded with cargo or converted to a bin-and-dump carrier, though various types of skids and sleds were devised where even tracked as opposed to wheeled vehicles were impractical. Also of importance was the adaptation of an Alaskan innovation, the wanigan, a skid-mounted platform with sides and a roof used for storage, housing and work space. These were the most versatile vehicles in most of Alaska, though even they had a tendency to bog down in tundra, and the tracks churned up the muskeg so that no unprepared road could be used efficiently for very long. In the Aleutians, the surface and the terrain was such that often the winch units had to be anchored and the cats walked up or down slopes using these attachments rather than primary motive power.

Carryall scrapers -tracked creepers with a scraper blade and conveyor arrangement that dumped the excavated spoil into a bin- made by LeTourneau and Woodbridge were used at larger construction sites, as were power shovel/dragline units. These were made by Bucyrus-Erie, Northwest and Lima, and required Alaskan modifications involving special undercarriages, longer track frames and wider treads. Among wheeled vehicles, the workhorse was the 2 1/2 ton (Deuce-and-Half) platform truck, used for general transport. Models made by Chevrolet, Ford, International and GMC were used. This vehicle could also be converted to a dumptruck model, though a variety of specialized dump-trucks were also used, including Euclid all-wheel-drive 10 and 20 cubic yard dumpsters. Again modifications, such as heavier frames and springs, were required, since transport needs often exceeded rated loads. Caterpillar, Austin, Western and Galion graders were also used. The Jeep, among other small

transport and staff vehicles, was used as well. There were an estimated 5000-10,000 vehicles in use in Alaska during World War II, providing a wide variety of uses and problems (Bush 1944; Draft History 1944; Talley n.d.).

With all these various vehicles, most of which were operated abusively under harsh conditions, maintenance was a problem. There was a constant shortage of spare and replacement parts as well as of tools and trained mechanics. Repair was laborious in a climate where fingers would freeze to metal and gasoline could freeze in fuel lines, especially when proper facilities were lacking. Mobil shop packages and vehicles were set up to be taken from site to site as needed, but these were inadequate. Permanent repair shops were established at Ladd Field, Fort Richardson, Annette Island, Yakutat, Excursion Inlet, Sitka, Kodiak and Dutch Harbor. Fort Glenn served as the forward repair base facility for the Aleutians until Adak was well established. Later, repair facilities were set up Amchitka, Attu and Shemya (Bush 1944).

Since one of the primary purposes of the military presence in Alaska was to support aerial activity, aircraft facilities were important. It was virtually impossible to house aircraft under cover or even to work on them inside. A variety of structures and techniques were used and devised to cope with these problems. At the lowest level were exhaust preheaters, devices consisting of rubberized canvas sleeves designed to fit over the engines of planes and attached to a heater which were used to bring the engines to cranking temperature. Temporary nose hangars, consisting of a pipe and wood frame covered with canvas to field shelter repairs, were also developed. Mobile shop trailers were used to bring the tools to the aircraft, rather than queuing up the aircraft for limited shop facilities. Permanent Base/Operations hangars were built at Fort Richardson (270x270 feet) and Ladd Field (271x327 feet) using steel arches set in a concrete slab floor. Yakutat temporary steel hangars with modular frames and siding (120x220 feet) plus lean-to shops arranged along the side were developed, as were TBA (Butler Manufacturing Company) knockdown modular steel truss hangars with 130x160 foot dimensions. Birchwood hangars, with 150 foot bowstring trusses on timber columns with 25 foot lean-to shops of a dimension of 202x300 feet were built, as were T or Kodiak hangars of all wood bowstring or Howe trusses in 129x47 foot and 40x55 foot sizes. Seaplane facilities, including buoys, ramps, parking hardstands and nosehangars were also constructed at various bases (Bush 1944; USN 1952).

The Navy bases had been built largely by civilian contractors of the Siems-Drake-Puget Sound coventure, but after the bombing of Dutch Harbor, contract labor was phased out by the Navy. The Seabees took over by July, 1942, but these construction troops mainly worked in the forward bases in the Aleutians. The last Siems-Drake-Puget Sound workers left by February, 1943, though the Army would step up the issuance of civilian contracts. The Navy meanwhile opened up new installations at a cannery at Sand Point and at Chirikof Island, southwest of Kodiak.

The Eleventh Air Force began bombing runs against Kiska, covered for the first time by fighter support, from Adak on September 14, 1942. The closeness of the new base allowed the Air Force to step up its attacks. During the fall, the Japanese lost at least 34 planes, including one to the RCAF (which

had moved a squadron of Kittyhawks out to Adak), plus eight probable kills, while the US lost ten planes in combat (mainly to antiaircraft fire) and 63 to weather and mechanical problems (Draft History 1944:60). The Japanese, who had initially planned to hold Attu and Kiska only until winter, were now convinced that the US was going to invade Kiska. On August 24, the Japanese began evacuating Attu to concentrate all their forces on Kiska, a move completed by mid-September, 1942. In October, the Japanese North Pacific command was reorganized. The Kuriles were reinforced, Attu was reoccupied by 1000 troops, and Kiska was reinforced to a strength level of 4000 (Conn et al. 1964:273-274). Meanwhile, the Navy recalled most of Theobald's vessels from Alaska to support the campaign at Guadalcanal where, incidentally, the Japanese carrier Ryujo, which had attacked Dutch Harbor, was sunk in August, 1942. Thereafter any further aggressive activity in the Aleutians was put on hold for the winter and pending availability of forces.

Additional harassment of the Japanese forces was carried on by the submarine command. Operating outmoded S-class boats out of bases at Kodiak and Dutch Harbor (and later at Adak and Attu), the Navy attacked Japanese shipping throughout the Northern Pacific, including the Sea of Okhotsk and the Japanese home islands. Even with defective torpedos which often went haywire and/or failed to explode on impact, the S-boats accounted for almost 25 percent of the Japanese shipping sunk in the Northern Pacific campaign, with a loss of two subs. While there were numerous reports of sightings of Japanese submarines in Alaskan waters (the RCAF maintained anti-submarine patrols out of Yakutat and Annette Island, and one Japanese sub was sunk in the Panhandle area), the Japanese use of submarines was ineffective, with most being assigned to resupply duty rather than harassing shipping.

Another Navy effort in Alaska, the introduction of motor patrol-torpedo (PT) boats, was doomed to failure. Three squadrons (MTB DIV 1 with four craft and MTB DIV 13 with 12 craft at Adak and MTB DIV 16 with six craft at Attu) were assigned, but proved unsuited to Alaskan usage and lacked tactical targets. The small craft with plywood hulls were no match for turbulent seas, and the lack of insulation led to the formation of ice up to two inches thick on interior hull surfaces. The only tactical use of the PT boats was as decoys in the Kiska invasion: plywood panels were attached to resemble landing craft, and they were paraded offshore in front of the Japanese positions while the main force hit the other side of the island (History of the ACS-Kiska 1945). Otherwise, PT boats served supply, rescue and patrol duty, when they were able.

The role of the Coast Guard was relatively minor. It continued to attempt to provide fisheries patrol and search and rescue functions, although the war effort curtailed much of this. The Coast Guard did operate port and communications facilities in the Southeast and the Gulf of Alaska, where the Navy increasingly turned over responsibilities as its attentions were drawn to the west.

The Army had planned to occupy Tanaga along with Atka after the Adak base was established, but there was no pressing reason to do so. There was, however, concern that the Japanese would move to occupy Amchitka, 60 miles east of Kiska. Admiral Nimitz directed Theobald to preempt any such occupation, and

Colonel Talley was sent with a party of Alaska Scouts to reconnoiter the island for an airfield site in December, 1942. General Marshall approved the advance to Amchitka and agreed to assign troops for an invasion of the Japanese held islands.

While planning for the Amchitka occupation was underway, another change in the command structure occurred. In late December, 1942, Vice Admiral Frank Fletcher inspected NORPACFOR and evaluated Admiral Theobald. On January 4, 1943, Theobald was transferred out and his command assumed by Rear Admiral Thomas C. Kinkaid, a former carrier commander in the Southwest Pacific. Theobald's second-in-command, Rear Admiral W.W. Smith was also replaced by Rear Admiral Charles H. "Soc" McMorris.

Kincaid, a combat veteran who liked action and was more to Buckner's liking, immediately went on the offensive, arranging for a task force to deliver the Army's Amchitka occupation force of 2000 under Brigadier General Lloyd E. Jones. After weather delays, the force was finally landed on January 11, 1943, and begin work on the runway. The Japanese discovered the encroachment on January 24, but the strip was finished by February 16, and eight P-40s flew in to drive away the Japanese, who had maintained intermittent harassing bombing of the garrison. By the end of February, there were 8000 troops on Amchitka and an operational air base that could send planes out to attack Kiska and Attu at will. Six or seven missions could be flown every day, weather permitting. February 13, 1943, however, marked the last bombing mission flown by B-17s; these aircraft were withdrawn in favor of the bigger payload, longer range B-24s. Perhaps as few as 100 B-17s saw service in the entire Pacific area (Chinnery 1985).

The position of the Japanese on Kiska and Attu was barely tenable. While they could perhaps hold out indefinitely on strictly tactical grounds, having sufficient numbers and being dug in, they were limited by their lack of air power and a very tenuous supply line. The Army and Navy area commanders realized that they could not hold the islands without massive reinforcements and an offensive campaign to drive back the US forces, but their requests for men and materiel were denied, as was their request to withdraw, since it was felt that such would leave Japan open to attack by the US and/or the USSR.

The Battle of the Komandorskis was to determine the final outcome by severing that supply line. In February, 1943, Kincaid ordered Admiral McMorris to set up a blockade of the Japanese-held islands with one heavy and one light cruiser and four destroyers. McMorris shelled Attu, sank one Japanese transport and scared off two others near Kamchatka in the sea-lane to Attu and Kiska (Morison 1951). With this presence plus increased bomber activity, some 40 Japanese ships were sunk in the sector by early March and Japanese casualty figures approached 3500. The last supply ship reached Attu on March 10, 1943 (Garfield 1969:197f). Hosogaya assembled a force consisting of nine ships, including one heavy and two light cruisers to escort the supply ships. The US task force was outnumbered, outgunned and outclassed. The two fleets traded shots in broad daylight for three and a half hours on March 26, 1943. McMorris' Salt Lake City was dead in the water and his ships were almost out of ammunition when the Japanese broke off the engagement and headed for home in fear that bombers were coming. Actually, the bombers were delayed by a

series of circumstances which left the fleet unprotected except by luck. No further attempts to relieve the garrison were made, and Hosogaya was removed from command.

Kincaid and Buckner got along well after the storminess of the Buckner-Theobald collaboration. Their first joint decision was to move their headquarters to Adak in March, 1943, for the preparation of the invasion of Attu and Kiska. About that time Buckner was promoted to Lieutenant General and Kincaid to Vice Admiral, with various additional promotions being received down the line. The Aleutian invasion was to have a force of about 25,000 troops, division strength. DeWitt asked for the 35th Division which was commanded by major General Charles C. Corlett and Brigadier General Eugene M. Landrum, both of whom had Alaskan and amphibious operations experience. The War Department offered the 7th Division commanded by Major General Albert E. Brown, a mechanized cavalry unit trained for North Africa, on a take-it-or-leave-it basis. These troops began training in California for Operation "Landcrab" in January, 1943, under the supervision of Marine Major General Holland "Howlin' Mad" Smith, an expert in amphibious assault. Overall command strategy and operations planning were under the direction of Vice Admiral Francis W. Rockwell. As the time for the invasion neared, it became apparent that neither adequate shipping nor personnel would not be available for a full-fledged assault on Kiska. Kincaid suggested that Kiska be bypassed in favor of smaller and supposedly less well defended Attu. Kiska could then be interdicted on both sides and starved out. This plan was provisionally approved on March 10, 1943, by the Joint Chiefs, with final approval coming on March 22 (Conn et al. 1964).

Early intelligence held that the Japanese occupation force on Attu was only 500 men. This was later upgraded to an estimate of 1600-1800, still short of the actual strength. Japanese documents show a strength of 2234, but actual counts put it about 2400. Since the information on Attu was so sparse (no maps of the island's interior were available), planning continued in a vacuum throughout March and April, while the invasion buildup occurred. By early May, there were about 27,000 men on Adak (19,000 Army and 8000 Navy) and 11,000 on Amchitka (10,000 Army and 1000 Navy), not counting the actual invasion force, which was en route from San Francisco to a staging area at Cold Bay. The attack fleet would include three battleships assigned for the occasion, six cruisers, 19 destroyers, an escort carrier, the Nassau with 26 F4F Wildcats, and five troop transports. There were a whole series of contingency plans, and the final one, Plan E, version 2, was not decided upon until the force was on station, so there was some confusion about roles from the start (Draft History 1944:126). One group would land at Holtz Bay (Beach Red) on the north side of the island, supported by a small scout force on the western flank (Beach Scarlet), while the main body would land at Massacre Bay on the south (Beaches Yellow and Blue), with a reconnaissance force covering their eastern flank at Alexai Point. The plan was to have the two forces drive the defenders between them, link up at Jarmin Pass between Holtz and Massacre Bays, and pin the Japanese down in Chichagof Harbor, where they could be dealt with by Navy guns and air bombardment. The anticipated schedule for this plan was three days. The air force began softening up Attu with shuttle bombing, though bad weather stopped many planned missions and made targeting ineffective.

After the inevitable weather delays, the troops went ashore on May 11, 1943. The fog made a mess of the landing, but no enemy resistance was encountered at the beachheads. However the initial landing force of 3500 began to take fire from dug in positions higher up the slopes as they slogged inland towards the ridges at the head of Holtz Bay and up Massacre Valley. At this point, the invasion bogged down, with insignificant advances being made through May 14 (D+3). General Brown called for reinforcements, engineers and heavy construction equipment (the latter at the suggestion of Colonel Talley, who urged him to think ahead so that construction could get underway as quickly as possible). The constant call for more troops (the 4th Regiment reserves were released to him) and the unclear request for construction equipment and supplies for six months led the operation's commanders to believe that Brown intended to settle in rather than push the operation to its conclusion. Brown had not been the first choice for the job by the local commanders to begin with, and when Kincaid, frustrated by the lack of progress and worried that his ships were sitting ducks for enemy submarines, asked that Brown be relieved of command, DeWitt and Buckner concurred. General Landrum was appointed to head the ground forces on May 16, just as the troops on the north were finally dislodging their opponents and getting the operation moving. The US breakthrough led to the juncture of the northern and southern forces, bottling up the Japanese in Chichagof Harbor. Though it would take two more weeks to roust the defenders (and sniper attacks would be reported until September), the battle was essentially over (Draft History 1944:81f; Conn et al. 1964:279f; Cloe with Monaghan 1984:105f; Talley n.d.).

The Japanese were unable to mount a defense against the invasion, and the only attempt at a counterattack was submarine action and a raid by bombers based in the Kuriles, which were driven off. One B-24 and two P-38s were lost, as were seven F4Fs, largely due to the inexperience of the Navy pilots. The battle ended on May 29 with a desperate suicide attack by the 700 remaining defenders against the US position at the head of Chichagof Bay (Engineer Hill). The Japanese sought to break out and seize US guns and supplies in hopes that such a severe tactical setback would cause the Americans to withdraw. Wounded Japanese unable to participate in the assault were either killed by their officers or committed suicide prior to the attack. The wave swept past the US front lines, through rear echelon outposts, including aid stations and mess facilities, until it was stopped just short of the artillery positions which were its initial objective by a hastily organized defense led by Major James Bush of the ACOE. After being repulsed, the remnants of the Japanese withdrew to Chichagof and committed suicide, mostly with grenades. Out of nearly 2400 Japanese defenders, only 29 prisoners were taken. US forces lost 549 killed, 1148 wounded, and about 2100 more due to noncombat injuries and illness, mostly exposure, out of about 15,000 engaged (the Draft History lists a total of 2900 casualties to all causes, with 1200 due to exposure). In terms of ratios of enemy killed to US personnel killed or wounded, Attu was second only to Iwo Jima as the costliest American victory in the Pacific (Conn et al. 1964:295).

These results also pointed up several problems with planning and execution. The training of troops was barely adequate, and they were unused to conditions in the Aleutians and unskilled in survival techniques for wet and cold. They were also poorly equipped. Special equipment had been requisitioned and

delivered but not issued. The troops used Blucher boots, which got wet and trapped the moisture, so that feet later froze. Kersey wool pants, that were too heavy and would not dry out, and the Alaskan field jacket, which was too bulky, heavy and without a hood so that most men discarded it upon landing, were also used. Shoepacs, wool OD clothing and ski parkas were recommended after the Attu experience, as was the issue of rain suits. The troops were separated from their rucksacks upon landing so they had no access to changes of clothing, sleeping bags, and food. Supply was inadequate, with poor planning at the beachhead and movement of supplies to the front being exacerbated by the tundra conditions encountered. There was inadequate issue of rain suits, gloves, insoles, sleeping bags and shelter halves (Draft History 1944:98f).

A report of interrogations of POWs captured at Attu and held in a tentcamp at the stockade at Adak states that the Japanese accused the US of using poison gas and tanks, though they admitted that the gas was probably just battle smoke or fog and the tanks were tractors. They attributed their defeat to a general lack of firepower. They had 75mm AA/antitank cannon, 75mm pack howitzers and light machine guns and argued that they would have done better had they had heavier ordnance, such as 105mm and 150mm artillery and heavy machine guns. They pointed out that the US troops were considered psychologically "soft," but well equipped in terms of firepower, and so were a force to be reckoned with (Draft History 1944:188f). Japanese facilities at Attu consisted mainly of dugouts and trenches with machine gun nest strong points. The floors of the dugouts were raised, allowing drainage, a problem which US troops complained off frequently with winterized tents and hut type structures. The Japanese had attempted to build a runway at Holtz Bay, but had made little progress due to a lack of construction equipment. There were two-wheeled carts used manually as wheelbarrows, and a tram with dump cars for spoil, but only two small Caterpillar-type tractors, which had been used primarily for shifting artillery rather than construction. Facilities and equipment on a personal level were relatively plush (the Japanese were better prepared in terms of equipment for cold weather warfare), liquor rations were provided and recreational facilities (Attu had a ski run for use by the troops) were reasonably well appointed (Talley n.d.).

Almost before the battle was over, the ACOE was at work on landing fields at Alexai Point and Casco Cove on Attu (ignoring the Japanese site at Holtz Bay) and on Shemya, where extensive fill (up to 50 feet of sand with burlap layers for stability) was required to utilize what was one of the few flat islands in the Chain. Later the Army would bring in the West Construction Company to build roads at Attu, while it put up the other facilities itself. No Japanese facilities were reused. The new airstrip at Alexai Point was ready for bomber use by mid-July. Elsewhere, Alaska continued to fill out with military construction. Navy outposts were opened at Cape Greville, Chernabura, Sanak (Caton Island) and Sand Bay, while the Army worked on port improvements at Valdez (using NG personnel), Mile 26 airfield (using Morison-Knudsen), and on the various AWS stations. ACS personnel were also involved in all advances and assaults, setting up battlefield communications and then establishing radio, telephone and AACS facilities. Reconnaissances for additional airfields continued to be made throughout the period. In the Gareloi Island group, Ogliuga Island was selected for the site of an emergency field, built

by the Seabees. Possible sites for emergency fields were surveyed at Nikolski on Umnak, but no action was taken, as was the case with the Agattu survey. Work continued on the ALCAN and CANOL projects. The ACOE also made a reconnaissance in fall, 1943, of petroleum areas along the North Slope, but it was not until almost a year later that the Navy would begin to develop these properties (Bush 1944). Work after Attu, however, was accomplished without Colonel Talley, who had led the ACOE since early 1941; he was decorated for his role in establishing the strategic Fort Glenn base and transferred to Europe to help plan the Normandy invasion where indirectly his experience in Alaska helped improve supply line planning.

The planning for the assault on Kiska had begun before the Attu invasion got underway. A force under General Corlett was authorized in early May, 1943. By the end of July, 1943, almost 34,000 troops, including about 4800 Canadians, had been assembled at Adak and Amchitka for the operation. The idea of bypassing Kiska and leaving it and its estimated 10,000 defenders alone was less attractive after the debacle on Attu. The Joint Chiefs approved the plan for Kiska in late May, 1943, setting D-day for August 15. Instead of underestimating strength, as at Attu, the US overestimated it for Kiska: there were about 5200 personnel on Kiska, and they had been ordered evacuated to the Kuriles in late May. The problem was to get them off Kiska and through the US blockade. Submarine evacuation was tried, but subs were small and could take off very few personnel. After the sinking of three submarines, this attempt was stopped.

The US stepped up bombing of Kiska, although during June only eight days were considered suitable for operations due to weather, even though the base at Amchitka was less than 100 miles away from the target. Navy PV-1 Venturas were introduced and, with their airborne radars for navigation, aided in targeting. The Navy bombarded Kiska with four cruisers and four destroyers on July 6, 1943, adding shipborne firepower to the softening up process; naval bombardment would occur twice more before D-day. Heavy bombing continued, with pilots reporting decreasing effectiveness of antiaircraft fire. On July 28, 1943, the Japanese evacuated Kiska. The Japanese fleet with two light cruisers and six destroyers managed, after two futile attempts, to get into Kiska and load up all Japanese personnel, reportedly all in under an hour. The fleet headed for the Kuriles. The Japanese had been very lucky. On July 26, an apparently false radar signal had sent the US fleet scrambling after what it thought was the Japanese fleet, drawing off the blockading forces in the "Battle of the Pips."

After the weather allowed the resumption of bombing on August 1, pilots began to report "light" ground fire. By the 11th, reconnaissance showed that all vehicles were still parked in the same place. Intelligence also reported that it had not monitored any radio traffic since July 28th. Knowing that the Japanese were dug in in underground bunkers and suspecting that they would not oppose the initial landing but resist from high ground positions as at Attu, Kincaid chose not to gamble and ordered the full scale invasion to proceed. On August 15, the 100+ vessels of the invasion fleet, including LSTs, LCIs and LCTs with PT boats disguised with plywood panels as LCVPs acting as decoys in a feint on the southern beaches, put the troops ashore in Operation "Cottage." Not a single Japanese was located, though 142 Allied troops were

listed as killed, wounded and missing as a result of fire fights between patrols, booby traps and accidents. Seventy more were lost, with 47 wounded when a destroyer, the Abner Read, hit a mine in Kiska Harbor.

The Japanese base was constructed in semi-independent units, with the main camp at North Head, expanded in summer, 1942, to include outposts at South Head and the sub base as well as facilities on Little Kiska. In fall, 1942, the base at Gertrude Cove became the main base and during winter and spring of 1943, the facilities at Kiska Harbor were elaborated with the construction of roads, underground bunkers, trenches and fortifications. The Kiska Harbor and Gertrude Cove sites were semi-independent bases. Facilities included more than 50 buildings, artillery emplacements for up to 14cm naval guns, light tanks, concrete pillboxes, radar, searchlight installations, an underground hospital facility, submarine base (with four electric minisubs and drydock facilities), seaplane base, machine shops (including a foundry), roads with lined drainage ditches, 60 Nissan light trucks, 20 motorcycles, eight sedans and six mini cars and an incomplete airfield (which US troops with the benefit of heavy equipment completed in a week). Most Japanese facilities and equipment had been destroyed and troops were leery of what was left, fearing booby traps, though they were soon raiding Japanese caches for food, clothing and souvenirs (Draft History 1944:200f; ACS History-Kiska 1945).

During the Aleutian Campaign from capture to "liberation," the Army had lost 35 aircraft to enemy action and 150 to other causes, flying 297 missions and dropping about 4000 tons of bombs. The Navy's Fleet Air Wing had lost six planes to combat and 34 more to other causes, flying 12 bombing missions. The Japanese lost 60 aircraft, three destroyers, five submarines, and nine transports to combat, with others significantly damaged. With 8100 men and under 100 aircraft, they had managed to tie up 144,000 Allied troops at the height of the Kiska invasion (Cloe with Monaghan 1984:118-119). Of course Japanese naval and air forces and ground troops in supporting or logistical backup positions were tied down as well.

"The retaking of Attu was the high point of the war, as far as it concerned Alaska. Kiska was anticlimactic, and what happened afterward was chiefly a matter of tying up the loose threads of unfinished business. In ridding the Aleutians of Japanese invaders, the objective had been partly to eliminate a potential military threat, but mostly to eradicate a psychological blot" (Conn et al. 1964:298).

Those loose threads would involve a lot of building in Alaska and considerably more garrison work by the military before the stand-down came in Alaska. First, there was still to be a shooting war for some troops in the theater, though their role and numbers were sharply reduced. The main task, however, was out of the hands of the personnel in Alaska and concerned the establishment of a role for the Alaska garrison in the aftermath of the retaking of the Aleutians. The Allies had agreed to put the invasion of Europe at the top of the priorities list at the Casablanca Conference in January, 1943, and during that year the US commanders had been somewhat nervous that any activity in the Aleutians would be considered as taking away from that commitment. By late summer they were already fighting in the Mediterranean and in New Guinea while preparing for an advance in the Gilbert

Islands in the Central Pacific. In August, 1943, Roosevelt and Churchill met in Quebec to set strategy for the Normandy Invasion. Their staffs discussed an invasion through the Kuriles and the basing of B-29s in the Aleutians. The North Pacific invasion was advocated by Buckner, who had 144,000 troops on hand. With a mere 54,000 more, plus aircraft and shipping, he felt he could attack Paramushiro in the Kuriles, an action that might, he believed, prompt the Soviet Union to declare war on Japan and end hostilities in short order. Admirals King and Nimitz argued that the Central, and to a lesser extent South, Pacific theaters had better weather and better opportunities, and Generals Marshall and Arnold felt a northern route was not feasible. While Shemya and Amchitka were earmarked for possible B-29 deployment, Alaska was officially written off as an offensive theater and put in a holding pattern (Cloe with Monaghan 1984:121).

Admiral Kincaid was reassigned to the Seventh Fleet in the South Pacific, replaced by Admiral Frank Fletcher. All but two bomber squadrons were reassigned outside or disbanded, though those two as well as four fighter squadrons remained in the Aleutians. The Signal Corps withdrew AWS and service personnel. The Canadian ground and air personnel were also withdrawn. All Army air facilities east of Adak (except Elmendorf and Ladd Field) were placed on air-drome/reserve status in December, 1943. The Navy continued in overall command on paper, and the ADC was finally designated a separate department in November, 1943. As such, it reported directly to the Joint Chiefs of Staff but had little real responsibility.

The Japanese had large Army and Navy bases in the northern Kuriles, mostly around Paramushiro. Bombing of Paramushiro commenced from Adak with refueling and bomb loading at Attu, on July 10, 1943. Results were inconclusive, and on future missions there was heavy fighter resistance. Missions continued throughout 1943 and 1944, when the weather allowed, using B-24s, B-25s, and even PBYS and PV-1s. The long distances from bases at Attu and Shemya meant that many damaged aircraft had to ditch at Petropavlovsk in Siberia. Downed crews were interrogated and interned by the Soviets and their equipment appropriated to avoid the appearance of non-neutrality. An arrangement was eventually worked out by which US crews were repatriated through Iran (Cloe with Monaghan 1984). The last Japanese attack in the sector, on Attu, was a bombing run on October 13, 1943. Garfield (1969:296) argues that the effect of harassment missions against the Japanese in the Kuriles tied down 500 Japanese aircraft, one-sixth of Japan's air power near the end of the war, and 41,000 ground troops who could not be deployed elsewhere. This seems to be an exaggeration. Coles (1950:401) argues that 41,000 troops were occupied in the Kuriles in 1944, but that a total of 400 Japanese aircraft were stationed in the Kuriles and Hokkaido to counter a possible invasion from the North.

As the military activity in Alaska wound down, the complaints about the conduct of the war in the area began to surface. Territorial Governor Gruening, in a memo to Secretary of the Interior Ickes, argued that the military development had been primarily defensive in nature, poorly conceived and organized and essentially wasteful (Naske 1985). Inappropriate siting and construction types had resulted in facilities vulnerable to air attack, and inadequate planning had made the defense of Alaska more costly than it should

have been. The Truman Committee also investigated the CANOL Project in fall, 1943. The pipeline was operating from Skagway to Whitehorse and most of CANOL 3 and 4 were finished; in fact, oil was being pumped from Skagway to Whitehorse, rather than the other way around as intended. The committee was critical, citing design and cost problems, while the military took the position that the pipeline was necessary for the prosecution of the war. The wildcat drilling program sank 29 wells and found few reserves; drilling was halted in November, 1943. It was not until April, 1944, that Norman Wells oil reached Whitehorse. CANOL 3 to Fairbanks had been completed in fall, 1943, and was receiving oil from Whitehorse via Skagway by February, 1944. Some 4000 ACOE and 10,000 civilian personnel had worked on the project for two years at a cost of \$133 million. As a distribution network, the pipeline functioned well, but inadequate reserves of oil were located to justify its role as a production system and its contribution to the war effort was negligible (Dodd 1966).

Many construction projects continued after the shift from an active to a passive stance in Alaska. Work on base facilities at Kiska was ongoing, as were improvements at Amchitka and Shemya, including unsuccessful seawall construction which washed out shortly after construction. A small airfield was finally carved out at Dutch Harbor and plans were reportedly made to build a causeway from Amaknak to Hog Island to extend the runway. This causeway washed out in the first storm and was not rebuilt (Swanson 1983). Major depot construction began on Adak in fall, 1943, continuing into spring, 1944. But while new installations were being built, existing ones were also being shut down. In fall, 1943, the Navy closed down their stations at Sand Point, Entrance Point and Port Armstrong and turned the Port Althorp and Seward facilities over to the Coast Guard. Troop strength, which had been at 144,000 in mid-summer of 1943, had fallen to 113,000 by the end of that year, and this was a harbinger of a continued cutback. At the Teheran Conference in December, 1943, the Allies essentially wrote off China and Alaska as potential theaters from which to conduct operations. From then on, it would be a European and Central Pacific show.

2.3.3 Stand-down (1944-1946)

As far as military operations went, the only activity of note during the remainder of the war was the harassment bombing and observation conducted against the Kuriles from the western Aleutians. General Buckner, chafing in inactivity, requested clearance for various missions using Alaskan military resources, but was essentially told to keep quiet. In June, 1944, he was transferred to command the 10th Army in the assault on Okinawa. He was killed during the battle at the end of June.

The Navy began to explore its Petroleum Reserve No. 4 on the Arctic Ocean, sending a party of Seabees to Barrow in March, 1944. They were followed by a construction detachment who, in August, 1944, began drilling and exploration. The Seabees built airstrips at Barrow and Umiat on the Colville River. A second year found the Seabees developing ground transport using cat trains to

haul equipment delivered at Barrow to the interior. Operations, including drilling, continued until August, 1945, at which time it was turned over to civilian contractors (US Bureau of Yards and Docks 1947). Oil would not be produced until commercial production began in the 1970s.

Life in the Aleutians settled down to a routine existence after the recapture of Attu. Although by 1944, plumbing, service clubs, libraries and the USO had arrived, many GIs were bored and felt forgotten, if not actually punished by Alaskan and particularly Aleutian duty. Punishment may not be too strong a word. The military maintained a facility at Camp Shenango, Pennsylvania, for "subversives," until Eleanor Roosevelt heard about it and campaigned to have it closed. Afterwards the Army transferred several of the individuals from Shenango to the Aleutians, where duty was considered hard and they could be kept isolated. The irony was that one of the major assignments of personnel in the Aleutians from late 1943 on was monitoring Soviet radio traffic, a task to which the Army assigned suspected leftists. Among those shifted from Shenango to Adak was Dashiell Hammett, whose commanding officer, Brig. Gen. Harry Thompson, a murder mystery fan, assigned him to publish a camp newspaper, the Adakian. Hammett assembled a cast of characters, including Robert Kolodny, who had served in the Abraham Lincoln Brigade in the Spanish Civil War, and Bernard Kalb among others. Hammett also requested the transfer of blacks into his operation, to the discomfort of a still largely segregated Army (Layman 1981:187f).

The Adakian was perhaps the most illustrious of a series of post newsheets. The Yakutattler was published in 1940, and the Kodiak Bear provided the same weather prediction every day: "weather reports suspended for the duration." The Attu Dingbat, little more than a bulletin board sheet posted by Signal Corps personnel during the battle, was also run for a time. Censorship and isolation meant that any news was welcome.

Movies were also welcome. The Signal Corps sent Colonel Darryl Zanuck and Lieutenant John Huston to Alaska to make a propaganda film. Huston's Report from the Aleutians, a color effort made primarily at Adak in Fall, 1942, contained a large amount of propaganda, such as crediting the US with practically having destroyed the Imperial fleet at the Battle of Dutch Harbor and having B-17s change to B-24s during the course of a bombing run to Kiska. Once theaters were established, movies were available to the troops. The world premier of A Tree Grows in Brooklyn was held on Attu (Morgan 1947), and most films were first-run; however, troops at Dutch Harbor complained of reruns, especially the showing of newsreel footage of the Dutch Harbor attack at every screening. The Japanese POWs from Attu were impressed by the quality and variety of films available on shipboard. USO shows with celebrities including Joe E. Brown, Edgar Bergen, Errol Flynn, Olivia DeHavilland, Ingrid Bergman, and Yehudi Menuhin, among others, were arranged.

Other forms of entertainment included chasing foxes, hunting artifacts (once the presence of prehistoric occupation was established by avocational archeologists and vandals), plant collecting, and bird watching. Many posts eventually had gymnasium facilities, with boxing and even a basketball league. Dutch Harbor maintained a ski area. Libraries were well used even if poorly stocked and organized. The lack of trees and the lack of women led to

the slogan that there was a woman behind every tree in the Aleutians. The military tried to solve one problem by planting 2000 spruce on Adak in 1943; six survived. More careful planting in 1944 resulted in a 90% survival rate. Trees were also planted on Attu, Atka and Unalaska (Morgan 198:69). As to the problem of women, there were no civilian women in the islands after the evacuation of the Aleuts, except for a few nurses. Early civilian ACOE female employees in Anchorage complained somewhat of harassment, but more about the lack of suitable apartments. Prostitution flourished around mainland bases until it was stamped out or forced into a more clandestine mode of operation. The town fathers of Seward offered a site for a proposed USO club free of charge if they would be allowed to set up a red light district near the base (Talley n.d.). When women were finally officially admitted to the military, federal law prohibited their serving outside the continental US. This restriction was finally lifted for Alaska, Hawaii and the Caribbean in 1944 (Spector 1985:394). The Aleutians apparently had a greater actual or perceived problem than other theaters with regards to homosexuality, and there were numerous court-martials and discharges over this issue, so that service in the Aleutians sometimes carried a certain stigma with it. Suicide and self-inflicted wounds were common occurrences. Transfers to other areas prior to 1944 were difficult to obtain. Alaska was a low priority area and needed what troops it had. Transportation out was also uncommon. Officers tried to get transfers for men at Adak who had been in Alaska for over two years, but were told that no leaves or transfers outside the area were possible but that transfers could be granted to Amchitka, which was even more primitive and actually in an immediate combat zone. Alcohol was usually not available and very costly when it could be found, although officers usually could obtain liquor, which led to greater resentment. Morale was a constant problem, exacerbated by the weather, isolation and terrain. While documented data on these conditions is difficult to locate, the anecdotal data (while probably overdrawn) serves to underscore this situation.

Civilian life in Alaska during the war largely revolved around servicing the serviceman. After it was reasonably sure that the mainland would not be invaded, the populace settled down to take advantage of the opportunities available because of the war. Initially there was hostility to outsiders, since many felt that the military and contractors preferred to bring in their own people rather than hire locally; in fact, the skilled labor pool available was inadequate to cope with the boom. Later, with the influx of so many people, there was less distinction between newcomers and long-term residents. The Forest Service, for instance, allowed wholesale logging in the national forests to provide spruce for aircraft construction until 1944, exemplifying the commercial development of the times. Mining and fishing was also stepped up, providing a minor boom, though the main profit was in the commercial handling of goods and services.

Slowly, the military began to close down its operations. By the end of 1944, there were only 50,000 personnel in Alaska. The Navy closed out its base at Sitka in 1944, turning it over to the Alaska Native Services Bureau in 1946; it had built about 65 percent of the projects originally authorized there. Operations at Kodiak and Dutch Harbor began to wind down as well. Excursion Inlet, completed at a cost of \$30 million but never used, was decommissioned. It would be demolished after the end of the war using German POW labor, which caused a stir because of the local post-war unemployment problem (Woodman 1985).

In late 1944, the Japanese began launching balloons carrying bombs designed to be blown by prevailing winds towards the US, some of which drifted over Alaska and were shot down, more for practice than for security concerns. The bombing runs over the Kuriles continued, and the regularity of downings in Russia led commands to give courses in Russian and issue "Pete" kits with currency and small gifts to help ease the way for downed air crews. The Japanese issued the Sho plans, including Sho-4 for the defense of the Kuriles and the Northern Japanese islands which called for an all-out last ditch effort. The Alaska Air Forces waited to be assigned the promised B-29s. Secretary of State Cordell Hull lobbied for B-29s for the Aleutians, but General Marshall demurred on the grounds that the production run was inadequate to supply Alaska, since the intention was to concentrate them in the Marianas, the only bases from which B-29s could hit Tokyo. Finally, B-29s were ordered to stage in China (Operation MATTERHORN) but planes and crews were ordered to the Marianas as soon as they were secured. Only one B-29 -a plane that had been undergoing cold weather testing at Ladd Field- landed at Shemya in early 1945. In 1945 the US began using incendiary bombs, mainly against industrial targets, but more indiscriminately as time went on. The last mission over the Kuriles was flown on August 13, 1945.

The original agreement with the USSR called for them to enter the war against Japan three months after the war ended in Europe. While the primary consideration in the use of the atomic bomb was to save US lives in an invasion of mainland Japan, some have suggested that a subsidiary concern was to hasten the end of the war in order to prevent the Soviets from being able to claim concessions in the Far East. The first atomic device was dropped on Hiroshima on August 6, 1945. Russia declared war on Japan, attacking in Manchuria and on Sakhalin on August 9. Shumushu was invaded on August 17 and fighting continued until the 23rd. Japan surrendered on August 15, ending the war. Prior to this, the US-Soviet alliance had been proceeding with aircraft transfer along the ALSIB route and shipping transfer at Cold Bay. Russians were trained in amphibious assault techniques, and subchasers were transferred at the facility known as Hula-2 at Cold Bay, where the Soviets reportedly constructed an officers' club. This activity ended with the Japanese surrender. News of the surrender was greeted with enthusiasm. The basic question was when do we go home? As with so much during the war, Alaska received low priority in evacuation of personnel.

While the stand-down occurred very rapidly at many bases in Alaska, it dragged on at others, partially due to a lack of available transport to evacuate the troops and partially due to uncertainty as to whether the massive investment made in infrastructure should be maintained or allowed to deteriorate. The military had learned that the per capita costs of maintaining fixed installations in Alaska were roughly five times the cost of similar facilities in the Lower 48 (Draft History 1944:514). This was largely due to the fact that Alaskan bases were unable to "live off the land" as were most other posts. A rule of thumb in the Aleutians was that it required one ton of supplies per month to maintain a man (ACS History-Shemya 1945). Not only did climatic conditions require special, costly modifications, but Alaska also

lacked a civilian infrastructure to support installations. Supplies, services and such basic requirements as utilities could not be purchased from nonexistent surrounding communities, leaving the military to construct virtually all facilities from scratch. Nor was transportation or labor available prior to its provision by the military. Many facilities were unsuited to any but military use, nor was there a civilian market for many which were not so suited. Having invested heavily in Alaska, it required a major decision to abandon what had been established, since conditions were such that a lack of occupation would result in a rapid deterioration of the facilities. It was considerations such as these, rather than long-term strategic thinking, which slowed the demobilization of Alaska as a military establishment. Nevertheless, the stand-down occurred rapidly, with many troops essentially packing their duffel bags and heading out. Most remaining installations were placed on caretaker status, and military personnel in Alaska fell from a high of 144,000 in 1943 to a mere 19,000 in 1946 (Cloe with Monaghan 1984).

3.0 DATA COLLECTION

Data collection for this project was designed to satisfy a variety of project needs and requirements including: a) preparation of a data base in the form of an annotated bibliography of documents concerning the conduct of World War II in Alaska; b) development of a historic context for World War II in Alaska in accordance with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716); c) identification of both known and potential cultural resources property types related to the relevant historic context(s) along with a basis for the evaluation of their significance; d) identification of specific locations currently included, or which might in the future be included, as part of DERA in Alaska; e) familiarization of project personnel with typical DERA locations through limited site units; and f) identification of other factors relevant to management plan development (e.g., presence of non-World War II related cultural resources in DERA areas, existing land use plans, etc.).

Four subtasks were initially identified as necessary components of the data collection task: identification of archival information sources, establishment of the archival data base, agency consultations, and field inspections. Additional data collection activities, principally consultations with knowledgeable private individuals and organizations, falling outside these discrete subtasks, were also undertaken during the course of the project.

3.1 Archival Information Sources

The first step in establishing the project data base and bibliography involved identifying which institutions possess relevant materials. A total of 79 institutions which might potentially contain such materials were identified from directories of archives and manuscript repositories (e.g., NHPRC 1978, Ulibarri 1982) and on the basis of contacts with project consultants. All institutions were contacted, either in person or by mail and requested to provide information on the type and extent of their holdings which relate to World War II in Alaska. A complete list of institutions contacted is presented in Table 3-1. A more detailed listing giving addresses, telephone numbers, and contacts is contained in Appendix A.

On June 3, 1985, EnviroSphere submitted to NPS a Draft Prioritized List of Information Sources prepared on the basis of responses received as of May 24, 1985. That report classified each of the 48 institutions which had responded as of that date into one of four categories along with an explanation for the categorizations. The four categories were:

1. institutions to which EnviroSphere was contractually obliged to visit;
2. institutions identified as having holdings which are likely to be relevant and which should be visited;
3. Institutions identified as having materials which are duplicative, marginally relevant, or of an insufficient quantity and which would not be visited; and
4. institutions determined to have no pertinent holdings.

On June 24, 1985, EnviroSphere formally requested a change in work scope to allow data from the second category of institutions to be incorporated into the project data base. Although the request was subsequently denied, a large number of the category-2 institutions were in fact visited and data was collected from them. Institutions which were visited and whose holdings comprise the principal part of the annotated data base for the project are marked with an asterisk (*) on Table 3-1.

An updated Prioritized List of Information Sources is presented in Appendix B.

3.2 Annotated Data Base

The data base compiled for the project consists of annotated references for written records, films, drawings, plans, testimony and other types of information dealing with the conduct of World War II in Alaska and constitutes a bibliographic finding aid. Information for the data base was collected by a team of historians and archivists who examined the holdings of the category-1 institutions on Table 3-1. The level of annotation varied from citation to citation. The greatest level of detail was used for documents believed to have the greatest potential for use in development of either the preservation management plan or a cultural resources mitigation plan for DERA.

Prior to the start of data base compilation a standardized form was developed for recording archival data. A separate form was prepared for each document or group of documents examined by researchers as appropriate. Each form contained the following information when available:

- o a unique identifying number
- o provenience of the material
 - institution
 - record group (RG) number or name of collection
 - series name or number
 - folder title
 - document ID
- o bibliographic citation (including title, author, date, publisher or issuer)
- o place names or locations referred to
- o property types referred to
- o an evaluation (excellent, fair, marginal, irrelevant) of the materials
- o a description of the contents of the document, record group, etc.

Information from these forms was then entered as a data base file on an IBM-PC micro-computer. It was determined that a sort of the data base by place name would be most useful for preservation management planning and DERA mitigation planning purposes. A sort of the data base by property type (see Section 4.4) was originally contemplated but was found to be impractical.

The complete annotated data base prepared for this project is presented in Volume 2.

3.3 Agency Consultations

Throughout the course of the project numerous contacts were made with federal, state, and local agencies. Principal agencies contacted included the National Park Service, the Corps of Engineers, and the Alaska Office of History and Archeology (Alaska State Historic Preservation Officer). Other agencies contacted included the Bureau of Land Management, the Fish and Wildlife Service, the Bureau of Indian Affairs, and numerous municipal agencies. The majority of information from these contacts related to preservation management planning and DERA mitigation planning. Information obtained through agency consultations is discussed, where appropriate, in Sections 5.0 and 6.0.

3.4 Field Reconnaissance

The purposes of the field reconnaissance was to allow principal project personnel to a) become acquainted with general conditions at proposed DERA sites, b) observe on-going DERA activities, c) observe examples of World War II associated debris, d) gain extra familiarity with the specific sites visited, in particular those anticipated to play important roles in the preservation management plan, and e) identify any special considerations associated with the climatic conditions and geographic setting of the study area which might effect project recommendations.

On June 5, 1985, EnviroSphere proposed a series of itineraries to the National Park Service. All proposed itineraries included visits to Attu, Whittier, Kodiak, and Umnak (Fort Glenn). Nome and Port Clarence, Sitka, and Cold Bay were identified as potential mutually exclusive additional sites. At the request of the NPS-COR, Cold Bay was selected. Subsequently, logistical problems resulted in both Attu and Kodiak being eliminated, and Dutch Harbor, Fort Mears, and Chernofski being added.

Relevant details of the field reconnaissance are noted in later sections of this report which deal with the specific sites visited.

3.5 Supplemental Data Collection

In addition to library and archival data, information collected from government agencies, and information gathered during the field reconnaissance numerous other sources and potential sources of information were identified. The Explosives Ordnance Detachment (EOD) at Fort Richardson provided a briefing on potential hazards which might be encountered by project personnel during site visits. At the same time, EOD personnel recounted their knowledge of many of the proposed DERA sites which they have visited in the course of their duties.

No deliberate attempt was made to conduct a formal oral history program as part of this project. However, numerous veterans who had served in Alaska during the war volunteered information and personal recollections. Foremost among these was Brig. Gen. Benjamin B. Talley, USA (Ret.), who was District Engineer for the Army in Alaska during much of the war. General Talley also allowed EnviroSphere access to the daily log he kept during his service in Alaska.

As part of the archival investigation portion of the project, project staff viewed 21 films and videotapes at the Motion Pictures Branch of the National Archives. The majority of the items viewed were 16mm and 35mm Army Signal Corps products.

No attempt was made to obtain copies of photographs for reproduction in this report. This decision was based upon several factors: 1) the large numbers of photographs identified meant it would be impossible to select those most relevant to the project until after all archival sources had been analyzed, 2) cost prohibitions, and 3) the ready availability of several published collections of relevant photographs. Foremost among these publications are ACOE (1977), Cohen (1981), Cloe with Monaghan (1984), Mills (1971), and Morgan (1980). In addition, issues of Alaska Life magazine published between 1939 and 1946 contain numerous photos relating to World War II activities in Alaska.

A particular effort was made to identify prehistoric and historic archeological sites via a literature search and consultation with specialists. Because of the magnitude of the area which had to be covered and the nature of prior research (sketchy for much of Alaska), the archeological resources noted in the discussion should be viewed as an illustrative sample rather than as an encyclopedic catalogue of potential resources for any given area. It should be assumed that virtually any site identified has the potential to contain archeological remains.

Information was also obtained from various Alaska Native Regional Corporations, Coastal Zone Management agencies, and present residents of proposed DERA areas who were encountered during the course of data collection. Information received from these sources was utilized in the preparation of sections 4.0, 5.0 and 6.0 of this report.

TABLE 3-1: Institutions Contacted For This Study

Alaskan Air Command, Office of History*
Alaska Historical Library
Alaska Museum of Transportation and Industry
Alaska Railroad Headquarters
Alaska State Archives
American Aviation Historical Society
Anchorage Historical and Fine Arts Museum Archives
Army Center of Military History
Army Corps of Engineers*
 Alaska District, Anchorage*
 Historical Office, Washington, D.C.*
Canadian Department of National Defence, Directorate of History
Libraries of the Claremont Colleges, Normal F. Sprague Memorial Library
Cold Regions Research, Engineering Lab, Alaskan Projects Office Library
Defense Audio-Visual Agency*
Engineering Societies Library
General Services Administration, Office of Real Property, Western Division*
Gonzaga University, Crosby Library, Oregon Province Archives of the Society of Jesus
Sheldon Jackson College, Stratton Library, Sitka
A. Holmes Johnson Memorial Library, Kodiak
(Japanese) War History Office, Defense Agency Tokyo
Ketchikan Community College Library
Ketchikan Public Library
Kettleson Memorial Library, Sitka
Kodiak Community College Library
Kegoayah Kozga Public Library, Nome
Library of Congress*
 Geography and Map Division
 Manuscript Division*
 Motion Picture Broadcasting and Recorded Sound Division
 Prints and Photographs Division
Marine Corps Historical Center
Maxwell Air Force Base, United States Air Force Historical Research Center
Carrie M. McLain Museum, Nome
National Archives and Records Agency*
 Cartographic and Architectural Branch*
 Diplomatic Legislative Branch*
 Federal Archives and Records Centers:
 Kansas City, MO*
 San Bruno, CA*
 Seattle, WA*
 Suitland, MD*
 Judicial and Fiscal Records Branch*
 Modern Military Field Branch*
 Motion Pictures Branch*
 Office of the National Archives*
 Still Pictures Branch*

TABLE 3-1: Institutions Contacted For This Study (Cont'd)

Naval Facilities Engineering Command, Historical Information Office*
 Naval Historical Center (Operational Archives)*
 New England Air Museum
 New York Public Library*
 Public Archives of Canada, Archives Branch
 National Film, Television and Sound Archives
 National Map Collection
 National Photography Collection
 Picture Division
 Public Archives Library
 Franklin D. Roosevelt Library
 Seattle Historical Society, Museum of History and Industrial Archives
 Seward Community Library
 The Smithsonian Institution National Air & Space Museum Library*
 Syracuse University, George Arents Research Library
 The Society of Wireless Pioneers
 Department of the Navy, Submarine Force Library & Museum
 The Harry S. Truman Library
 United States Air Force, Office of Air Force History
 United States Air Force Academy Library
 United States Coast Guard Academy Library
 United States Coast Guard Museum, Northwest
 United States Coast Guard 17th District
 United States Coast Guard Station, Kodiak
 United States Coast Guard Station, Sitka
 United States Military Academy Library, Department of the Army
 United States Naval Academy, Nimitz Library, Department of the Navy
 United States Naval Institute
 Library and Photographic Services
 Oral History Department
 University of Alaska*
 Anchorage Archives*
 Fairbanks - Alaska and Polar Regions Department*
 Juneau - Library
 University of Washington Libraries*
 Archives & Manuscripts Division*
 Suzzallo Library
 Vallejo Naval and Historic Museum
 Washington State University Library
 Western American Institute for Exploration
 Z.J. Loussac Library, Anchorage

4.0 DATA SYNTHESIS

The principal purpose of this section is to provide the bases for the recommendations contained in the preservation management and DERA mitigation plans which comprise the following two sections of this report. The approach used generally conforms to the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716-40). The use of the concepts of historic context and property type and how they relate to one another, especially in regard to the evaluation of the significance of specific properties is the basis for the data synthesis presented here.

Section 4.1 presents a discussion of the functions of historic contexts and how historic contexts were prepared for this study. Section 4.2 describes how those contexts were broken down into more manageable units - themes - and goes on to define those themes. Section 4.3 presents information on the specific places associated with the historic contexts and associated themes. Section 4.4 discusses structure types associated with the contexts, while Section 4.5 defines associated property types. The distinction between these two "types" is significant. In many cases structural types are synonymous with the property types (as defined in the Secretary of the Interior's Standards and Guidelines). For the historic contexts, considered here, structure types are usually standardized, often prefabricated units which are seldom unique or specific in and of themselves. Instead they form the building blocks of functional complexes which in turn are associated with themes comprising the historic contexts. Using the information presented in previous sections, section 4.6 presents the bases for the evaluations of significance of sites and property types, and the evaluations themselves.

4.1 The Historic Context

The principal historic context with which this report deals may be designated "Alaska in World War II." This context corresponds with the "Alaska and the Aleutians" subtheme of the "World War II in the Pacific National Historic Landmark Theme Study" prepared by the National Park Service.

Historic contexts are intended to organize information "based on a cultural theme and its geographical and chronological limits." Contexts describe the significant broad patterns of development in an area that may be represented by historic properties (48 FR 44717). Historic contexts, therefore form the basis from which goals and priorities for the identification, evaluation, and treatment of historic properties are made. Their purpose is to allow the identification of broad themes of significance rather than to serve as a comprehensive recounting, down to the smallest fact, of the history of a particular time and place. The historic context developed for this study--Alaska in World War II--has been prepared under that assumption.

Decisions about what is or is not important to the historic contexts of concern here were made on the basis of three factors: 1) impressions gained from the examination of the huge body of primary documentary information which is included in the project data base, 2) subsequent evaluations of the role of Alaska in World War II as presented in major secondary sources and as that role is understood and presented by contemporary historians, and 3) an emphasis on activities and events which would have left tangible remains. The end result has been presented as Section 2.0 of this report.

4.2 Themes

The principal historic context for the project focuses on the geographic limits of Territorial Alaska and the period beginning with the war buildup in 1939 and ending with the stand-down by the end of 1946. The broad theme is World War II, but this can and must be further broken down to achieve the goal of linking actual locations and property types to the historic context so that significance can be assessed and management plans developed for specific properties. The themes listed below are designed to be comprehensive, providing a framework within which to approach the assessment of physical remains. It should be noted that there is considerable overlap among property types (and specific properties) and the various themes. It also follows that a property type/specific property which may be significant under one theme may not be significant under another. Hence, the importance of the level of analysis in constructing a matrix for evaluations of significance and development of a management scheme.

It is also important to note that within the framework provided by the Secretary of the Interior's Standards and Guidelines, it is necessary to limit historic contexts to internally coherent and unified constructs - thematically, geographically, and temporally. The physical scale of Alaska strains the limits of geographic unity, though its essential isolation makes it a valid category. Within the overriding thematic concern of World War II, extension of temporal parameters beyond 1939-1946 is unjustifiable. While there is continuity between pre-war interest in Alaska as a strategic location, the lack of actual development largely removes it from a management-oriented context. Similarly, the post-war period, while linked with the events of World War II, falls outside that unifying theme. From a logical standpoint the post-war/Cold War era is a separate context, while from a practical standpoint, it generally represents a dismantling of the World War II infrastructure (Cloe with Monaghan 1984). Both argue for a significant break. For these reasons, the Cold War in Alaska has been developed as a separate historic context with its own themes.

Themes are potentially expandable ad infinitum. The criteria used here for designation of a theme is that significant activities be covered and that those activities be associated with potentially recoverable material remains. The sub-themes attempt to include activities and property types in a comprehensive manner while allowing for variation and flexibility. All could be sub-divided further and, given overlaps among property types, collapsed into fewer categories as well. Additionally, other themes are possible, but lack associated property types. The theme of "Alaskan World War II Myths" suggest itself with elements such as the canard that the Akutan Zero (a Japanese war plane recovered virtually intact by the US) helped with the design of the Corsair and Hellcat fighters, even though both were ready for production prior to its recovery. Scuttlebutt and morale are also important topics, although they can only be approached very indirectly through such themes as communications and recreation which provided the mechanisms but say little about the sociological dynamics involved. The following themes for the World War II in Alaska Historic Context have been identified:

Japanese Occupation. The Japanese occupation of Attu and Kiska and subsidiary islands was the only occupation of what is technically North American soil by the enemy during World War II and the only such occupation since the War of 1812. The expulsion of the Japanese from those islands became the primary

objective of military operations in Alaska. That objective, in concert with attempts to insure that the area of occupation could not be expanded, guided the form that American military development and deployment would subsequently take. These factors, together with the fact that material remains associated with the Japanese occupation constitute a distinct class of property types, warrant the topic being treated as a separate theme.

Allied Military Operations. This theme is the largest and most diffuse of the themes which comprise the historic context. Potentially it could be divided further. Divisions that suggest themselves are offensive vs. defensive activities; air vs. land vs. naval operation, etc. However, a critical examination of these potential divisions indicates that they would have only limited utility as management planning tools. For example, an airfield can serve both offensive and defensive purposes. The "secret" airfield at Umnak was originally constructed for the purpose of defending naval facilities at Dutch Harbor. It subsequently became a center for offensive air operations against the Japanese during the so-called "Kiska blitz."

It can be argued that facilities constructed prior to the United States entry into the war (or prior to the bombing of Dutch Harbor) were by definition defensive in nature. However, many of those facilities were later modified or expanded to serve offensive needs. It is apparent that no clear distinction can therefore be made between offensive and defensive activities on a chronological basis. On the other hand permanent coastal defenses such as those at Seward could not serve in anything other than a defensive capacity.

The distinction between naval, air, and ground operations is likewise a difficult one to make. Many Army facilities were originally constructed to protect naval installations. The Navy subsequently provided support for Army operations such as the landings at Attu, and both services carried out air operations (the Army through the Army Air Forces, the Navy through the Fleet Air Wing).

Transportation and Military Logistics. While military operations provided the rationale for the development of bases and infrastructure in Alaska, a key point that is stressed in virtually all accounts of those activities are the problems of transportation and supply. Included under this theme are events, places, and property types which directly relate to those problems. These include the construction of the ALCAN Highway and the CANOL Pipeline, and facilities whose principal purpose was rail, sea, or air transport and which could, did and do function in one or more of those capacities independently of specific military operations, e.g., Annette Island and Whittier. The consideration of the significance of specific types of land, sea, and air transport (e.g., vehicle, ship, and aircraft types) as opposed to particular vehicles, ships, or planes which may have individual significance because of their association with a particular person or event, is covered under this theme. (The special issues relating to aircraft, vehicles and watercraft warrant special treatment of these property types. See Appendices D and E).

Communications. This theme is related both to military operations (for instance combat offense and defense, such as the communication nets linking the Dutch Harbor and Umnak installations which failed during the Japanese attack and the Aircraft Warning radars) and to transport/logistical support (telephone, radio, and submarine cables). Communication was of major

importance in running a large and isolated segment of the war and represented major investments of material and effort. This theme is of special concern to this study since it is associated with a large quantity of widely scattered, low density, remains.

Engineering/Cold Weather Operations. Additional topics under this theme include testing, construction, and adaptation. Cold Weather Operations are interrelated with other themes, but worthy of separate consideration since it was not merely the distances and isolation which set Alaska aside as a special area of the war, but the fact that operations had to be conducted in arctic and subarctic environments which placed special strains on personnel, materials and equipment, and had to be specially engineered and adapted. Cold weather adaptations provided the explicit purpose of some facilities (the Cold Weather Experiment station at Fairbanks) and distinguished what otherwise would have been standard military construction projects (Pacific huts, Yakutat huts, airfields, etc.).

Lend Lease. During the period 1942-1945, almost 8,000 aircraft (Heck 1958) and close to 100 ships (Helbock and Dimpsey 1978) were transferred to the USSR in Alaska, which was the primary locale for strategic equipment transfer. The Northwest Air Transport Command (Ladd and Marks Fields) and the Hula #2 project (Cold Bay) formed the core of this transfer, but subsidiary sites - including potential shipwreck and downed aircraft loci - are also subsumed under this sub-theme.

Native/Civilian Activities. Topics falling within this theme include general populace, construction, evacuation/internment of Aleuts/Nisei. In 1940, the total population of the Alaska Territory was 76,000. This populace was occupied in extractive and subsistence pursuits and lived in low-density settlements adapted to the environment. A significant proportion represented Native Americans. World War II brought enormous changes which can be discussed as part of interrelated topics. By-and-large, there is little mention made in accounts of the war years, of the role of the civilian population. Few skills were taken advantage of directly and little infrastructure was used, mainly because so little was available. The major construction projects, in fact, were faced with a lack of available labor, requiring the importation of a civilian workforce in addition to the influx of military personnel. Another important theme involves the internment of Americans of Japanese ancestry and the evacuation of Aleuts from potential combat zones. Clearly, all civilian activities in Alaska during the war years were influenced by, if not actually determined by, military operations.

4.3 Identification of Sites

4.3.1 Methodology

No single, comprehensive listing of past and present military installations and properties in Alaska is known to exist. Information on present Department of the Army holdings in Alaska was recently compiled (AHRG 1985), principally on the basis of Annual Real Property Utilization Surveys. The Office of the Chief of Engineers has advised Envirosphere (Ramirez, personal communication) that no official comprehensive inventory of Army holdings in Alaska is available. A map showing the locations of current military installations (including non-Army installations) has been prepared by the Defense Mapping Agency (No. 8205), but will not be available until late 1986.

In preparing this study efforts were directed to the identification of excessed military lands which were used during World War II or the Cold War period. Records on excessed government property are maintained by the General Services Administration (GSA). Records maintained at the GSA Office of Real Property (Western Division) in Washington, D.C. and GSA records archived at the Federal Records Center in Seattle were briefly reviewed, but could afford little relevant information at the level of investigation possible.

The principal data source for identifying sites was a computerized inventory prepared by the COE in 1984 in connection with DERA. That inventory lists approximately 650 sites, including many still in government ownership as potentially falling within the purview of DERA. That listing was still being modified by the Real Estate Office of the COE (Anchorage District) as of December, 1985. An updated listing is not anticipated until late summer, 1986 (Denfeld, personal communication).

Data from the COE listing was supplemented with information obtained from the bibliographic data base. Place names noted in the data was tabulated. A computerized sort indicated that a total of 110 place names were mentioned a total of 2254 times. A cross-referencing of place names with bibliographic citations is provided in Volume 2. (It should be noted that the identification of place names included in Volume 2 was dependent upon the level of detail recorded in the bibliographic citation prepared by the activist/historian who examined the source involved. Some documents which contained information relating to a large number of individual locations did not have each place name noted and hence are not necessarily included in Volume 2).

Finally, secondary sources and technical studies were closely reviewed for references to sites and activities which could be incorporated in the general list of place involved in activities falling with the Alaskan military contexts.

4.3.2 Identified Sites (World War II in Alaska Historic Context)

Sites identified via the methodology noted in Section 4.3.1 are briefly described below:

Adak Island NHL. The occupation of Adak in August, 1942, represented the first major expansion by Allied forces into the Aleutians against the Japanese forces following the attack on Dutch Harbor and the occupation of Attu and Kiska in June, 1942. The construction of an airfield at Sweeper Cove in under two weeks represented a major engineering feat. Air attacks on Kiska and Attu were staged primarily from this base, which became the joint Army-Navy Alaskan command and served as the staging area for the Kiska assault. Major facilities, including a supply depot, were constructed at Adak, which was one of the few bases retained in service after World War II.

Afognak Island. This island, north of Kodiak, was activated as a Navy radio station in March, 1942, but military facilities were never developed, and the area was downgraded to a recreation camp in 1944, and turned over to the US Forest Service after the war.

Agattu Island. After the seizure of Attu and Kiska in June, 1942, the Japanese began scouting the surrounding islands in the western Aleutians. Agattu was used as a dispersion anchorage for Japanese vessels servicing Attu and for the seaplane tender KIMIKAWA MARU. This tent camp on Agattu was abandoned in July, 1942. The island was scouted by US forces in connection with the invasion of Attu in May, 1943, and evaluated as an airfield site. It was used as a short-lived Allied communications post late in the war.

Akutan Island. Akutan was an Aleut village evacuated in June, 1942. A prewar whaling station, it was taken over by the Navy and used for coaling and servicing Soviet shipping heading through Unimak Pass after facilities at Dutch Harbor were occupied with strictly military traffic. The Soviets salvaged virtually everything in 1945, leaving the village and facilities essentially gutted prior to Aleut repatriation. Akutan was also the site of the crash of a Japanese A6M Reisen Zero which was recovered intact by US forces in summer, 1942.

Amak Island. Amak was a small observation outpost of Cold Bay established to provide surveillance of the Bering Sea approach to Cold Bay late in World War II.

Amchitka Island. This island was occupied by Allied forces in January, 1943, to deny its use to the enemy and provide a forward base for bombing attacks on Attu and nearby Kiska. Aircraft from Amchitka flew close support missions during the retaking of Attu and Kiska. Amchitka was one of two forward Aleutian bases prepared for the basing of B-29 aircraft, though the aircraft were never stationed there. The base was operated by the Air Force until 1949.

Anchorage. The main depot on the Alaska Railroad, Anchorage was the main population center in Alaska during World War II. Besides the railroad headquarters and stores, it was the location of a port facility, the Alaska Communications System depot and headquarters, Fort Richardson/Elmendorf Field, ACOE headquarters, various federal offices and civilian housing and activities. Merrill Field was one of the busiest air facilities in the world during the war.

Aniak. Aniak in the southwest interior was the site of a CAA airfield and communications node constructed during the pre-war buildup.

Annette Island/Metlakatla. One of the first military airfields completed during the buildup, Annette was built on Indian land using ACOE and CCC labor. It's construction provided an early test of engineering techniques for airfield construction in high latitude muskeg environments. Designed to protect the panhandle and western Canada from attack, Annette was garrisoned by Royal Canadian Air Force squadrons which conducted anti-submarine patrols over the Gulf of Alaska. Though active use was short-lived, the military maintained the facility until 1949.

Atka Island. In June, 1942, fear of the Japanese advance in the Aleutians led the Navy to station a seaplane tender at Nazan Bay, Atka, near the Aleut village. After the Japanese bombed the area, the Navy evacuated the Aleuts, burning the village to deny its use to the supposedly advancing enemy. Later use of the area for seaplane tenders led to Japanese attacks. The first use of P-38s in the theater in July, 1942, resulted in the destruction of two Japanese H6K Mavis flying boats, which were not subsequently used in the

Aleutians. The seaplane tender Casco was torpedoed by the Japanese RO-61, and was itself sunk by the destroyer Reid and PBY patrol aircraft. Five prisoners were taken, among the first Japanese POWs in the war. Atka was occupied by the Allies in September, 1942, as part of the Adak advance and served as an emergency landing field, communications stations and submarine cable relay station. Known as "Atkatraz" by those stationed there, the primitive outpost was abandoned in 1945. The Navy rebuilt housing for the Atka Aleuts, but no allowances were made for the Attu Aleuts who were also resettled on Atka by administrative fiat among their traditional enemies. Isolated Atka is currently the western most Aleut settlement.

Attu Island NHL. The Japanese captured Attu in June, 1942, following their raid on Dutch Harbor, making it the first North American US territory occupied by a foreign power since the War of 1812. The local Aleut population was interned in Japan during the war and forced to resettle among their traditional enemies on Atka at the end of the war. The initial occupation was to be temporary, and Attu was evacuated once in the fall of 1942, before being fortified in spring, 1943. The Allies bypassed Kiska and invaded Attu in May, 1942. Japanese resistance was underestimated, and the recapture took three weeks of hand-to-hand fighting in which casualties were high, aggravated by weather-related injuries due to inadequate training, equipment and delivery of support. The Japanese inflicted heavy losses in a last-ditch attack before committing suicide en masse. US forces established two airfields from which bombing raids were launched against the Kuriles. After the war, Attu was maintained as an advanced fueling station by the Navy until 1952, when it was turned over to the Coast Guard.

Bethel. This site near the mouth of the Kuskokwim River served as a CAA airfield with a military garrison, communications node and river transshipment point for supply of southwest interior sites during World War II.

Big Delta. This site was a CAA airfield with a military garrison that was part of the Northwest Staging route and ALSIB route, used for Lend Lease and Air Transport Command ferrying of equipment and supplies to the interior. Big Delta was also a communications node as well as a station on the ALCAN Highway and the CANOL 4 pipeline. Cold weather conditions were particularly harsh along this interior corridor, necessitating engineering adaptations.

Biorka. An Aleut village on Unalaska Island, Biorka was evacuated in June, 1942. Its inhabitants spent the war in relocation camps in the southeast until 1945. Biorka was not resettled after the war.

Boundary. This was a minor CAA airfield facility between the Yukon Basin and the ALCAN route constructed during the World War II buildup era.

Bruin Bay. A radio range navigation station in the lower Cook Inlet area set up during World War II.

Buldir Island. Located between Attu and Kiska, this small isolated island was scouted by the Japanese and eventually occupied by U.S. forces for use as an AACS air traffic control station and observation post. It was supplied from Kiska, largely by airdrop.

Burnett Inlet. An abandoned cannery site in the southeast panhandle area, this facility was used to house Aleuts evacuated from the Chain from summer, 1942, until the end of the war in 1945, when they were repatriated.

Cape Hinchinbrook. Located at the entrance to Prince William Sound, this site was chosen for an SCR-271 AWS station. Construction was begun, but the decision was made to emplace the equipment further west, so that the facility was never completed or used.

Cape Kigun. This station at the western tip of Atka was the location of the YH radar navigation beacon as well as AACS facilities. It is also the location of a reported downed B-24 aircraft.

Cape Lazaref. An AWS facility was located at this site on the south shore of Unimak Island near False Pass.

Cape Prominence. Located on the south shore of Unalaska Island, this SCR-271 AWS station was notable for the engineering difficulties involved in its construction. A 2400 ft. tramway with an average grade of 52 percent (with sections reaching 81 percent) was built to emplace and service the station.

Cape Sarichef. Located at the north entrance to Unimak Pass on Unimak Island, this station served as a LORAN facility and an observation post to maintain surveillance on shipping along this important transport corridor.

Cape Wislow. Located on the north shore of Unalaska Island, this SCR-271 AWS station required the construction of a tramway to emplace and service the equipment. Remains of the tramway were observed by Envirosphere personnel in 1985.

Chernabura. The Navy opened this radio and radar navigation facility in the Shumagin Islands in May, 1943.

Chilkoot Barracks. Originally commissioned as Fort William H. Seward, this station, built in 1902, was used to monitor the approach to Skagway during the Gold Rush era. In December, 1941, it was the only active infantry garrison in Alaska with a complement of 297 troops. It served as an induction center and R & R camp, manned for a while by Alaska National Guard units. It ceased to be an active post in 1943 and was deaccessioned in 1947.

Chirikof Island. A communications and navigation node, this station was established as an outpost of Kodiak in December, 1942.

Chuginadak Island. An AACS and radio facility in the Islands of the Four Mountains, this outpost experienced a fatality in a volcanic eruption in 1944.

Cold Bay/King Cove. This station began in 1941 as a CAA airfield, but was taken over by the ACOE in the push to fortify the Alaska Peninsula and eastern Aleutians in fall, 1941. Disguised as the "Saxton and Company" cannery, the facility was a functioning fighter and bomber based at the time of the raid on Dutch Harbor. It attempted to provide fighter cover for Dutch Harbor and its

bombers participated in the pursuit of the Japanese fleet. Cold Bay (Fort Randall/Thornburgh Field) was an intermediate support base for bombing attacks on Kiska, as well as for the Attu invasion. It served as a transshipment point for supplies and a communications node. It was also the site of Lend Lease shipping transfer to the Soviets and the location of Hula-2, a training center where US instructors prepared Soviet troop commanders for amphibious assault operations against Japan. The fishing village of King Cove served initially as the port for Cold Bay while dock facilities were developed. Troop strength dropped off in 1944, but the facility was operated by the Air Force until the early 1950s.

Cordova. Cordova was a pre-war Navy communications center (Port Whitshed, Mile 14/Hanscom, Eyak). During the World War II buildup, it was the site of a CAA airfield with garrison, a minor port facility and a communications node. It also has a small mining railroad the Copper River and Northwestern, which was refurbished for use in the transport link centered at the site.

Craig. An ACS communications station, this location was part of the communications network during World War II.

Deer Island. An AWS station was located here near Cold Bay/King Cove.

Dutch Harbor/Unalaska NHL. This was the third Naval base authorized in the buildup and the most westerly of the major bases in Alaska at the outbreak of World War II. The Naval Operating Base on Amaknak Island included seaplane facilities, a submarine base, stores and repair shops, a garrison and port facilities. The Army facility (Fort Mears) was one of the last to be built using pre-war permanent construction on a regular layout. Later, the Army facilities spread off Amaknak to adjoining Unalaska Island. The Japanese bombed Dutch Harbor on June 3-4, 1942, as part of the Aleutian component of the Midway operation. After the bombing, the Aleut population of Unalaska village was evacuated for the duration. Dutch Harbor was a major base with extensive facilities and elaborate coast defense, fire control, early warning and antiaircraft installations, including positions at Ulakta Head (Fort Schwatka), Eider Point (Fort Learnard), Constantine Point (Fort Brumback), Hill 400, Morris Cove, Constantine Bay, Kaletka Bay, English Bay, Agamgik Bay, Zharaoff Point, Ugadaga Bay, Uniktali Bay, Erskine Point, Nateekin Bay and Hog Island. Dutch Harbor also served as a minor Lend Lease liaison post prior to diversion of Russian shipping to Akutan. The Aleut village had been stripped during the military occupation, so that the Aleuts who returned in 1945 found little of what they had left in the evacuation. The base was closed in 1947.

Excursion Inlet. The lack of major port facilities in Alaska led in 1942 to the plan to create a port of entry from scratch in the panhandle to serve as a staging area for a potential North Pacific invasion of Japan. By the time the extensive facilities were completed in November, 1943, the Japanese had been expelled from the Aleutians and a northern invasion had essentially been discarded. The decision was made to dismantle the secret facilities at the end of the war, and 700 German POWs, mostly from the Afrika Korps, were brought in (after Germany had surrendered) to tear down the majority of the facilities. The work was essentially finished, and the POWs repatriated, in January, 1946.

Fairbanks. The major population center in the interior of Alaska, Fairbanks was the terminus of the Alaska Railroad, the ALCAN Highway and the CANOL 4 pipeline. It was a regional communications center as well as transshipment point.

Farewell. A CAA airfield and communications node was built at this interior location during the World War II buildup era.

Flat. An ACS station and ATG unit were located in this southwest interior location during World War II.

Forrester Island. An SCR-271 AWS station was slated for this location in the far southeast area early in the war, primarily to defend Annette Island. The site was prepared, including construction of an access tramway, but the equipment was never emplaced. A recent inventory of Forrester Island (Sverdrup-Forrester 1986) makes no mention of any tramway remains.

Fort Glenn/Chernofski. The construction of an airfield on Umnak Island (Otter Point, Cape Field) was begun in December, 1941, to provide air cover for Dutch Harbor, the latter having no suitable areas for an air facility for combat aircraft. The Army began the project, diverting CAA funds, and operating under the guise of the "Blair Fish Packing Company." The Navy opposed the location as being too far from Dutch Harbor to serve as effective protection and too far away for Dutch Harbor to supply or protect in turn, but was overruled. Because no port facilities existed or could be easily constructed at Fort Glenn, dock facilities were built at Chernofski, 12 miles across Umnak Pass. Ships were unloaded at Chernofski and supplies lightered to Fort Glenn. One of the first operational pierced steel plank runway surfaces to be built was located at Fort Glenn, and P-40s and B-26s were stationed there in early June, 1942. Though communications breakdowns prevented the Fort Glenn contingent from knowing of the attack on and participating in the defense of Dutch Harbor on June 3-4, 1942, Japanese planes fortuitously operated over Fort Glenn and were engaged on both days. Aircraft assigned to Fort Glenn (including RCAF P-40s) participated in the search for the Japanese fleet and the bombing attacks on Kiska. Advance headquarters of the Eleventh Air Force were moved to Fort Glenn in July, 1942. The advance to Adak in late August, 1942, meant that Fort Glenn was downgraded to an intermediate staging field. While facilities continued to be expanded into 1944, the base became a rear echelon area and was placed on the caretaker basis that year, although it was not closed until 1950.

Fort Richardson/Elmendorf Field. Construction began on Fort Richardson across Ship Creek from Anchorage in June, 1940. The airfield and garrison was to serve as the main base in south central Alaska and was headquarters for the Army's Alaska Defense Command until those headquarters were moved to Kodiak in 1942. The construction was elaborate, using pre-war plans and layouts, and the facility became a major transshipment post. It was one of the few Army facilities maintained at the end of World War II.

Fort Yukon. The site of a Gold Rush era post, Fort Yukon was developed as a radio range and CAA airfield for military use late in World War II.

Funter Bay. An abandoned cannery site in the southeast panhandle area, this facility was used to house Aleuts evacuated from the Chain from summer, 1942, until the end of the war in 1945, when they were repatriated.

Galena. This CAA airfield with garrison facilities was a station on the ALSIB Lend Lease air ferrying route. Galena also served as a communications node.

Golovin. Golovin was the site of an AACS station and an ATG unit serving the Seward Peninsula area during World War II.

Great Sitkin Island. Sand Bay on the southwest side of the island was established as a fuel depot to serve the Naval Operating Base at Adak in 1943. Great Sitkin has few developed facilities beyond those directly related to its mission, since it depended on Adak to provide most services. The fuel depot was maintained until 1952.

Gulkana. This CAA airfield and garrison site was constructed on the Richardson Highway to service and protect that transportation link. The harsh conditions required extensive engineering modifications. Gulkana also served as a communications node.

Haines. Haines was an ACS radio station and air/sea navigation station during the World War II era.

Homer. This site on the Kenai Peninsula was developed as a CAA airfield and communications node during the World War II buildup.

Igushik. This site on the Nushagak Peninsula in Bristol Bay was prepared for an SCR-271 AWS station in 1942, but the facility was cancelled prior to completion.

Iliamna. This site was developed as a CAA airfield and communications node during the buildup in World War II.

Jeanie Point. This site on Montague Island near the entrance to Prince William Sound was developed for the installation of an SCR-270 AWS unit in late 1941. The site was prepared, but the equipment was diverted elsewhere in spring, 1942.

Juneau. The capital of the Territory of Alaska, Juneau was developed as a port of entry and depot facility. It was soon determined that the facilities were inadequate and could not be effectively expanded to serve as a major port. Excursion Inlet was chosen for the staging area before the flow of the war made the development in the southeast a moot issue. A CAA airfield with garrison facilities and communications facilities were also developed.

Kaltag. This was the site of an AACS navigation station during World War II.

Kanaga Island. A prosperous fox-trapping operation during the 1920s and early 1930s, Kanaga had one of the few docks extant in the Aleutians at the outbreak of the war. It was less suited for an airfield than either flanking Adak or Tanaga, with the only noted World War II use being as a Navy weather station in late 1941-early 1942.

Kanakanak. This site near Dillingham was the site of an ACS radio station during the World War II era.

Kashega. This Aleut village on Unalaska Island was evacuated in June, 1942. Its inhabitants spent the war in relocation camps in the southeast. Kashega was not resettled after the war.

Kenai. This site was developed as a CAA airfield and communications node during the buildup in World War II.

Ketchikan. Ketchikan was the site of an ACS radio station and an auxiliary barracks for Annette Island during World War II.

Kettle Cape. This site on the south shore of Umnak Island was the location of an SCR-588 AWS station during World War II.

Killisnoo. An abandoned cannery site in the southeast panhandle area, this facility was used to house Aleuts evacuated from the Chain from summer, 1942, until the end of the war in 1945, when they were repatriated.

Kiska/Little Kiska Island NHL. After the bombing of Dutch Harbor in June, 1942, the Japanese occupied Attu and Kiska. Originally, the Japanese had intended a temporary occupation, but the situation after the Battle of Midway, coupled with the vehemence of the US bombing counter attack led the Japanese to dig in and construct facilities including seaplane, submarine, extensive coast defenses and underground garrison facilities. Bombing and subsidiary naval bombardment served to interdict Japanese reinforcement and supply operations, and prevented the Japanese from completing an airfield. Forces were considered inadequate to assault Kiska, and it was bypassed for an assault on Attu. Kiska was then hemmed in by garrisons on Attu and Amchitka. In the face of mounting evidence of an Allied assault, the Japanese were able to secretly evacuate their Kiska garrison in late July, 1943. The Allied forces, including some 5000 Canadian troops, invaded the empty island in August, 1943. With the expulsion of the Japanese from the Aleutians, the Allies saw no reason to build major facilities on Kiska, and it served as an emergency landing field and communications station until abandoned in 1945.

Kodiak NHL - Begun in 1939, Kodiak was one of the first naval bases authorized and built in Alaska. The Naval Operating Base was headquarters for the Navy until 1943, when the command was advanced to Adak. Kodiak had fleet and submarine facilities, stores, fuel depots, repair shops, garrisons, land plane facilities (Buskin River) and seaplane facilities (Womens Bay). The Army post (Fort Greely) was squeezed into the Buskin River area in elaborate pre-war type permanent facilities. RCAF squadrons also flew patrols out of Kodiak. Construction was by civilian contract and involved engineering problems such as bedrock removal and volcanic ash stabilization. Kodiak harbor and coast defenses were the most elaborate in Alaska. These defenses involved underground command complexes directing one 6 inch battery on Long Island (Fort Tidball), two 8 inch batteries at Miller Point (Fort Abercrombie) and subsidiary batteries at St. Peters Head, East Cape and Cape Chiniak (Fort J.H. Smith), where radar and auxiliary landing field facilities existed as well. Searchlight and fire control positions were located at Narrow Cape, Spruce Island, Kizhuyak, Artillery Hill, Soquel Point, Midway Point, Gibson Cove, Spruce Cape, Long Island, Chiniak, Miller Point and Buskin Hill. 155mm guns were added at Cape Chiniak, Buskin Hill and Deer Point. Seacoast radars were emplaced at Long Island, Piedmont Point and Cape Chiniak, and 90mm anti-PT-boat (AMTB) batteries were built at Puffin Island and Spruce Cape. Subsidiary observation posts were constructed at Woody Island (the site of a pre-war Navy radio station), Cape Greville and Entrance Point. Kodiak was also served as a minor Lend Lease transfer point. When the war moved west, Kodiak was downgraded in status. The Navy maintained a base at Kodiak until 1971, when it was turned over to the Coast Guard.

Kotzebue. This site served as a communication node and ATG unit station during World War II.

Koyuk. This was the location of an AACS station during World War II.

Ladd Field NHL. Begun in 1939, the cold weather testing facility at Ladd Field represented the first Army air facility constructed in Alaska. With the onset of the war, the aircraft, personnel and facilities assigned to Ladd were drafted into combat/patrol roles, though virtually all Allied and many foreign and enemy aircraft and other equipment was tested there during the course of the war. Ladd Field was also the transfer point on the ALSIB route for the almost 8000 aircraft sent to the USSR in the Lend Lease program between 1942 and 1945. The Soviet liaison maintained headquarters and facilities there. The Cold Weather Test Detachment also operated out of Ladd Field. The construction at Ladd involved the development of techniques for pouring concrete under arctic conditions and the design of walk-through, heated utilidors. Construction of hangars, barracks, utilities, etc. were the most elaborate in Alaska, following pre-war type permanent construction using reinforced concrete. Ladd Field (Fort Wainwright) is one of the few military facilities in continuous use since World War II.

Lava Lake. A minor radio navigation and weather station was built here on the Seward Peninsula to control traffic operating around Nome during World War II.

Little Tanaga Island. This was the site of an observation post on the Pacific approach to Adak Harbor during World War II.

McGrath. This site was developed as a CAA airfield with garrison to serve the southwest interior of Alaska in conjunction with the World War II military buildup. It also was the location of a variety of communications facilities. Frigid zone construction problems and difficulties of supply to this isolated site were the major distinguishing aspects of this base. McGrath was also the location of an ATG unit.

Middleton Island. Located in the Gulf of Alaska off the Kenai Peninsula, this was the site of radio navigation/communications installations during World War II.

Mile 26/Eielson. Constructed with civilian contract labor in 1943, this air facility was originally built as a dispersion field for Ladd Field. It served as a station on the ALSIB and Northwest Staging routes and was also served by the ALCAN Highway and CANOL 4 pipeline. The base was retained by the military as Eielson AFB after World War II, when facilities were expanded.

Minchumina. This was the site of a CAA airfield constructed at the time of the World War II buildup.

Moses Point. A CAA airfield was built here early in the buildup period, and garrison facilities were constructed in 1942. Moses Point was considered to be one of the few sites in the northwest suitable for development as a deepwater port, hence the haste in occupying it during the Bering Sea invasion scare in the summer of 1942. After the invasion threat was over, the garrison was removed and the facility downgraded to an observation post.

Nabesna. This was the location of a CAA airfield built during World War II.

Naknek. The site of a CAA airfield and garrison, this facility was used to stage patrols in 1941-1942 along the Bering Sea coast. It later became a communication node for the upper Bristol Bay area. An ATG unit was also located there.

Nenana. An existing community on the Alaska Railroad, Nenana became a major transshipment point for materials distributed by river on the Tanana-Yukon interior route during World War II. It was also the site of a World War II era CAA airfield.

Nikolski. Aleut residents were evacuated from Nikolski in June, 1942, following the attack on Dutch Harbor, and resettled in the southeast. There was relatively little damage to Aleut property here due to isolation, and Nikolski was resettled in 1945. The area was surveyed for an emergency landing field in early 1943, although due to changes in the tactical situation, none were constructed. An SCR-271 AWS station was constructed at Nikolski.

Nizki/Alaid Islands. These small islands were apparently scouted by Japanese forces occupying Attu. After the recapture of Attu by US forces, in May, 1943, Nizki/Alaid was planned for use as an annex to nearby Shemya. Because of difficulty of access, these facilities were curtailed.

Nome. The site of Gold Rush era Fort Davis, Nome was developed into a major air facility (Marks Field). Early in the buildup, the Seward Peninsula was considered vulnerable to attack from the Bering Sea, a fear which persisted into the summer of 1942. Following the raid on Dutch Harbor, an invasion scare caused the rapid buildup of the garrison at Nome in one of the first massive supply airlifts (Operation Bingo). Coast defenses and an elaborate set of facilities and subsidiary outposts, dispersion fields (Moonlight Springs, Davison) and communications stations were constructed at Nome during World War II. Nome was also the final US station on the ALSIB Lend Lease route and the site of an ATG unit. Cold weather construction and operations were a major concern, as was the effect of the buildup on a small civilian community. The base was abandoned in the early 1950s.

North Dutch Island. This location was the site of a radio range navigation station during World War II.

Northway. This CAA airfield and garrison was a station on the ALSIB and Northwest Staging routes as well as on the ALCAN Highway and CANOL 4 pipeline during World War II. Weather conditions were as severe here as at any other major site built during World War II, necessitating major adaptations.

Nulato. Nulato was the site of an ACS communications station during World War II. It was also the location of an ATG unit.

Nunivak Island (Mekoryuk). This Bering Sea location was the site of an observation and communications outpost during World War II. It also served as a minor Lend Lease transfer stopover for flying boats flown to Siberia via Kodiak, and was the location of two ATG units.

Ogliuga Island. This was the site of an emergency landing field, communications node and SCR-270 AWS station, all constructed and maintained from late 1943 to early 1945.

Outer Island. Chosen as the site for an AWS station early in the war, this location was prepared (including the construction of a tramway), but was never completed.

Pedro Dome. Pedro Dome near Fairbanks was site of an SCR-270 AWS station operated briefly early in the war.

Petersburg. This southeast area civilian population center was the site of a communications node operated during World War II.

Point Barrow. In 1923, the Naval Petroleum Reserve #4 was created on the North Slope. The Navy began exploration and development of the area around the indigenous community at Barrow in 1944-1945. Point Barrow was also the site of an ACS communication station and an ATG unit.

Point Hope. An AACS station was operated here and an ATG unit organized in this northwest coastal area during World War II.

Port Althorp. This was the site of a small naval auxiliary facility in the southeast. Located at an abandoned cannery facility in 1941, it had seaplane, small boat, and communications facilities. It was abandoned in June, 1944.

Port Armstrong. A small auxiliary naval facility was established at this location in 1941. It had small boat and communications facilities. Seaplane facilities were planned but not built. Construction was desultory and ceased with abandonment of the facility in July, 1943.

Port Clarence. This Seward Peninsula location was an observation post occupied late in the war. A pierced steel plank air facility was constructed in expectation of port development which was not undertaken as the war wound down.

Port Heiden. This location was surveyed for a CAA airfield during the buildup period, but construction of the staging field and garrison facilities was not undertaken until January, 1942. Built under the cover name of "Bering Fisheries" and designated Fort Morrow, the base had air facilities and served as a communication node linking mainland and Aleutian facilities. Construction was hampered by lack of access, and many facilities were cancelled in mid-1943. With the war moving out along the Chain, Port Heiden became a minor base in fall, 1943. It was deactivated at the end of the war and deaccessioned in 1949.

Port Moller. This was the location of a CAA airfield constructed during the World War II buildup era.

Portage. A station on the Alaska Railroad, Portage was the site of the construction camp and juncture for the Whittier cutoff, constructed in 1942-1943.

Portage Bay/Makushin. These were observation posts of Dutch Harbor with Makushin Bay serving as a dispersion anchorage. Nine destroyers were located

there when Dutch Harbor was bombed on June 3, 1942, but the attackers were unable to locate them in the fog. Makushin was also an Aleut community which was evacuated late in June, 1942. It was not reoccupied at the end of the war.

Ruby. A CAA airfield was scheduled to be built at Ruby, but was later moved to West Ruby and eventually to McGrath even further west during the prewar buildup period. Air navigations communications facilities and an ATG unit were established at Ruby during World War II.

Sanak/Caton Island. Navy communications and navigation facilities were established here in early 1943, as was an AWS station.

Sand Point. At the time of the raid on Dutch Harbor, seaplanes were operating from a tender at Sand Point. Later a naval facility was commissioned at Sand Point on Popof Island in July, 1941. It included seaplane facilities, small boat dock, fueling and coast defense facilities. After the war moved westward, the base served as a communications station until it was closed in April, 1943.

Scotch Cap. The site of a lighthouse, Scotch Cap also served as a Coast Guard observation post monitoring shipping in Unimak Pass. It was largely destroyed by a tsunami in 1946.

Seguam Island. A weather and AACS station was established on Seguam in 1943.

Semisopchnoi Island. This was the location of an observation post occupied during 1943-1944.

Seward. At the outbreak of the war, Seward (Fort Raymond) was the only developed port facility available in Alaska. Though closed part of the year due to ice, it was the terminus of the Alaska Railroad. Beginning in 1941, work was done to expand the dock, warehouse, railroad and other port facilities, including the construction of garrison facilities and a CAA airfield. It was not until fall, 1942, that work began on the elaborate harbor defenses, which would ironically not be completed before the war had bypassed the area and the Whittier cutoff had reduced the importance of the port itself. 6-inch guns were installed at Caines Head (Battery 293 - Fort McGilvray) and Rugged Island (Battery 294 - Fort Bulkley), with fire control positions at Rocky Point, Topeka Point, Carol Cove, Chamberlain Point, Alma Point, Resurrection Point and Boswell Island. SCR-296 surface craft detectors were installed at Patsy Point and South Beach. Subsidiary sites were constructed on Renard Island, Lowell Point, Hind Island and Cheval Island. Construction was exceedingly difficult, much of it being handled by private contractors. Seward also was a submarine cable landfall and communications node. The Navy turned over port jurisdiction to the Coast Guard as early as July, 1943, with Army interest shifting to Whittier about the same time.

Sheep Mountain. This was the location of a radio range and CAA radio station operated during the World War II period.

Shemya Island. Shemya was scouted by the Japanese occupying Attu in June, 1942. In fall, 1942, the Japanese planned to occupy the island, but plans were cancelled due to US activity. The island was reconnoitered following the recapture of Attu, and occupied by US forces on May 30, 1943. An airstrip was

ready in late June, and bombing missions against Kiska and later the Kurile Islands were flown. The base was prepared for B-29s, but the aircraft were never stationed there. Missions continued to be flown until the end of the war, when Shemya was placed on caretaker status. It was inactivated in 1954 before being brought back into use in 1958.

Shungnak. A radio range station was operated at this site during World War II.

Sitka NHL. The earliest authorized naval base of the World War II era, Sitka was the site of a Gold Rush era coaling base and marine barracks, as well as the former Russian capital of Alaska. The Naval Operating Base, begun in 1939, had port, storage, fueling, repair, and land and seaplane facilities. The Army unit (Fort Ray) had to be added later, taking advantage of what space remained. A causeway was built linking a series of nine islands (Japonski, Nevski, Reshimasti, Virublennoi, Gold, Sasedni, Kirushkin, Mogilnoi, and Makhnati). Construction was of pre-war permanent type, closely packed in the restricted space available. Elaborate coast defenses were constructed including 6-inch batteries at Shoal Point (Fort Babcock), Biorka Island (Fort Pierce) and Makhnati Island (Fort Rousseau), with 90mm anti PT-boat (AMTB) installations at Whale Island and Watson Point. Fire control positions were located at St. Lazaria Island, Hill 800, Lava Point, Clam Island, Kayak Island, Little Biorka, Ataku, Golf Island, Kita Island, Lisianski Point, Kasiana Island, Cape Edgecombe, and Sound Island. Coastal SCR-296 radar were located on St. Lazaria, Abalone and Biorka Islands. Additional stations were built on Peisan, Chichagof, Porpoise, Galankin and Povoratni Islands, Beaver Point, Charcoal Island, Indian River, and Cape Edgecombe. As the war moved westward, the facility was downgraded in 1943, inactivated in June, 1944, and deaccessioned in 1946.

Skagway. Skagway was the main access point for transport to the Yukon Territory via the Inside Passage Canal. The terminus of the White Pass and Yukon Railroad and the CANOL 2 pipeline, construction supplies and oil for CANOL 3 and 4 flowed through this port and over the rails and pipeline into the interior. Skagway had a garrison, port and storage facilities, and served as a communications node throughout World War II.

Solomon. There was an AACS station operated at this location during World War II, as well as an ATG unit.

St. George Island. Following the Japanese attack on Dutch Harbor in June, 1942, there were fears that the Japanese would attack Alaska via the Bering Sea. An ACS detachment consisting of two people was landed on St. George to maintain radio contact and report weather. At the time these men were dropped off, the Aleut and US Fish and Wildlife residents were evacuated. Troops were evacuated in August, 1943, and some civilians were returned that fall to manage the seal harvest.

St. Lawrence Island. Following the Japanese attack on Dutch Harbor in June, 1942, there were fears that the Japanese would attack Alaska via the Bering Sea. Alaska Scout/G-2 personnel were landed on St. Lawrence to man an observation post. After the threat faded, CAA and radio range facilities were established, making the island a communication node. The first organized ATG unit was reportedly on St. Lawrence.

St. Matthew Island. Following the Japanese attack on Dutch Harbor in June, 1942, there were fears that the Japanese would attack Alaska via the Bering Sea. Alaska Scout/G-2 personnel were landed on St. Matthew to man an observation post. After the threat faded, an AACS, LORAN and weather reporting station were established, making the island a communication/navigation center.

St. Paul Island. Following the Japanese attack on Dutch Harbor in June, 1942, there were fears that the Japanese would attack Alaska via the Bering Sea. That month the Pribilof Islands were identified and bombed by a patrol which mistook them for the Japanese fleet. An ACS detachment of two and five Alaska Scout/G-2 personnel were landed at St. Paul June 22, 1942, to establish an observation and communication post, and defend the island and destroy facilities if attacked. The outpost was reinforced by a garrison in September, 1942, including engineers whose job was to construct an airfield. St. Paul was manned until September, 1943, when all but a team of communication operators was relieved. They, in turn, left in August, 1944, turning operations over to USFWS personnel, which had been returned in fall, 1943, to manage the seal harvest.

Summit. This site on the Alaska Railroad route was the location of a CAA airfield, weather and communications/navigation facility during World War II.

Tagalak Island. Located between Adak and Atka, this location was prepared for the emplacement of an SCR-270 AWS station. However, the equipment was not ultimately installed.

Talkeetna. This site on the Alaska Railroad route was the location of a CAA airfield, weather and communications/navigation facility during World War II.

Tanacross. This was the location of a CAA airfield and garrison on the ALSIB and Northwest Staging routes. It also lies on the ALCAN Highway and CANOL 4 pipeline. Special local conditions included the presence of hot springs, allowing the installation of year-round sewage lines.

Tanaga Island. After the Japanese occupation of the western Aleutians in June, 1942, the decision was made to expand US bases westward to counter the enemy presence. In fall, 1942, the Army recommended the construction of an airfield on Tanaga, but the Navy vetoed this because of a lack of harbors. Adak was chosen as the main base, with Tanaga as a forward position. An emergency landing field was finally established in July, 1943. The last units departed in October, 1945, although the facility was not formally disestablished until 1951.

Tanak. This site north of Fort Glenn on Umnak Island was the location of an SCR-588 AWS station during World War II.

Tanana. This was the site of a CAA airfield and garrison along the ALSIB ferrying route.

Teller. This was the location of an observation and communication outpost established during World War II. It was also the site of an ATG unit.

Tigalda Island. This island near the south entrance to Unimak Pass was the location of an SCR-270 AWS station operated during World War II.

Udagak Strait. This was the location of an observation post along the south side of Unalaska Island established as an outpost of Dutch Harbor during World War II.

Ugat. This location was prepared for an AWS installation, but the project was cancelled and no equipment was emplaced.

Umiat. As part of the exploratory development work on the Naval Petroleum Reserve #4 (established 1923) in 1944-1945, a camp and airfield were built at Umiat on the Colville River. Operations were turned over to civilian contractors in 1946.

Unalakleet. This was the site of a navigational communication facility established during World War II. It was also the location of an ATG unit.

Unalga Island. Unalga, east of Dutch Harbor, was the site of a prewar Navy radio station, which was reestablished and expanded as a navigation station during World War II.

Valdez. Valdez was the terminus of the Richardson Highway, the only road serving the interior of Alaska at the outbreak of World War II. It was a port facility in a civilian community which was enlarged during the war to handle increased volume of traffic. A garrison, a CAA airfield, port, storage and various other facilities were constructed, though the focus on Seward, Anchorage and, later, Whittier (all served by the Alaska Railroad which operated year-round and more efficiently than trucking), the construction of the ALCAN Highway and the westward shift of the war meant that Valdez was a minor strategic location.

Wainwright. This Chukchi Sea village was the location of an ACS station and ATG unit during World War II.

Wales. This location at the narrowest part of the Bering Strait was the site of an AACS station, observation post and ATG unit during World War II.

Ward Lake. This cannery site in the southeast panhandle region was used to house Aleuts evacuated in June, 1942, until 1945.

Whittier. In 1940, it became apparent that port facilities for south central Alaska were inadequate to support the buildup. In April, 1941, it was decided to construct a railroad branch, including tunnels, and a port facility at the head of Passage Canal. Work was begun in summer, 1941, by West Construction Company, with holing through in November, 1942. At the time the longer tunnel (13,000 ft.) was the fourth longest in the world. The port and cutoff began operating in summer, 1943, although construction of facilities continued until the end of the war, when the facility was turned over to the Alaska Railroad. The Army resumed responsibility for the port and cutoff in 1946.

Wrangell. Wrangell was the site of an ACS station and submarine cable relay station during World War II.

Yakak. Located on the southwest tip of Adak Island, Yakak was the site of an extensive SCR-588 AWS station established in late 1943-early 1944.

Yakataga. This was the site of a CAA airfield and communication/navigation facility constructed in conjunction with the buildup during World War II.

Yakutat. Begun in 1940, this CAA-planned airfield at the site of a cannery and served by the Yakutat and Southern Railway was built by the ACOE. One of the first military airfields built in Alaska, it provided engineering lessons in high latitude muskeg-based construction and the use of prefabricated structures. Yakutat had dumps, dock facilities, and coast defense installations as well as garrison facilities. Designed to protect the west coast from attack across the Gulf of Alaska, Yakutat had a short active service life (which included RCAF anti-submarine patrols), though it was not formally abandoned until after the war.

Some additional locations should be mentioned, but are not listed separately. There were a recorded 76 Alaska Territorial Guard (ATG) units in Alaska during World War II (see Table 4-1). Where the only known World War II activity consists of ATG units, these locations have not been listed separately. Though active during World War II, ATG units did not participate in regular military operations or as units and had minimal associated material remains. In some locations, armories/kashims were built for the units, but most were erected using surplus military structures, such as quonset huts, delivered in 1946, after the war was over.

The US Army Corps of Engineers computerized property list (1985) notes numerous Alaska Communications System (ACS) and related communication sites, however, many of these sites represent unmanned relay facilities of little historic import. A further sample of inventory reports on military sites recently compiled for DERA indicates that many such sites were built after the period covered in the World War II historic context and/or lack any extant material remains. Hence, the decision was made to include here only such communications facilities as were marked by stations with call letters built and/or operated during the period of the World War II historic context or which are of interest for other reasons noted in documentary sources. For instance, the Bureau of Indian Affairs operated an extensive radio network in Alaska which was made available to military and other federal authorities at the outbreak of the war. However, this network was not expanded or incorporated into other military communication systems and played no demonstrable role during the period. Inclusion of such facilities in coverage would not add to knowledge or understanding of activities in Alaska during the period, nor can such facilities be considered historically significant within the context. Neither can these omitted features be considered unique or technologically significant. Listings of communication related sites associated with the historic context are presented in Tables 4-2 through 4-4.

A final locational consideration involves linear features such as the ALCAN Highway, the CANOL pipeline(s), telephone/telegraph landlines, submarine cables, etc. Only such locations as can be shown to represent nodes or particularly unique and/or significant features have been evaluated as warranting a separate notation.

4.4 World War II Building and Structure Types in Alaska

The following listings and descriptions were prepared by Building Technology, Inc. (BTI) under subcontract to EnviroSphere. Principal data sources used were Bush (1944) and USN (1952). These two documents comprise the official

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	AKA	AKB	AKC	AKD	AKE	AKF	AKG	AKH	AKI	AKJ	AKK	AKL	AKM	AKN	AKO	AKP	AKQ	AKR	AKS	AKT	AKU	AKV	AKW	AKX	AKY	AKZ	AKAA	AKAB	AKAC	AKAD	AKAE	AKAF	AKAG	AKAH	AKAI	AKAJ	AKAK	AKAL	AKAM	AKAN	AKAO	AKAP	AKAQ	AKAR	AKAS	AKAT	AKAU	AKAV	AKAW	AKAX	AKAY	AKAZ	AKBA	AKBB	AKBC	AKBD	AKBE	AKBF	AKBG	AKBH	AKBI	AKBJ	AKBK	AKBL	AKBM	AKBN	AKBO	AKBP	AKBQ	AKBR	AKBS	AKBT	AKBU	AKBV	AKBW	AKBX	AKBY	AKBZ	AKCA	AKCB	AKCC	AKCD	AKCE	AKCF	AKCG	AKCH	AKCI	AKCJ	AKCK	AKCL	AKCM	AKCN	AKCO	AKCP	AKCQ	AKCR	AKCS	AKCT	AKCU	AKCV	AKCW	AKCX	AKCY	AKCZ	AKDA	AKDB	AKDC	AKDD	AKDE	AKDF	AKDG	AKDH	AKDI	AKDJ	AKDK	AKDL	AKDM	AKDN	AKDO	AKDP	AKDQ	AKDR	AKDS	AKDT	AKDU	AKDV	AKDW	AKDX	AKDY	AKDZ	AKEA	AKEB	AKEC	AKED	AKEF	AKEG	AKEH	AKEI	AKEJ	AKEK	AKEL	AKEM	AKEN	AKEO	AKEP	AKEQ	AKER	AKES	AKET	AKEU	AKEV	AKEW	AKEX	AKEY	AKEZ	AKFA	AKFB	AKFC	AKFD	AKFE	AKFF	AKFG	AKFH	AKFI	AKFJ	AKFK	AKFL	AKFM	AKFN	AKFO	AKFP	AKFQ	AKFR	AKFS	AKFT	AKFU	AKFV	AKFW	AKFX	AKFY	AKFZ	AKGA	AKGB	AKGC	AKGD	AKGE	AKGF	AKGG	AKGH	AKGI	AKGJ	AKGK	AKGL	AKGM	AKGN	AKGO	AKGP	AKGQ	AKGR	AKGS	AKGT	AKGU	AKGV	AKGW	AKGX	AKGY	AKGZ	AKHA	AKHB	AKHC	AKHD	AKHE	AKHF	AKHG	AKHH	AKHI	AKHJ	AKHK	AKHL	AKHM	AKHN	AKHO	AKHP	AKHQ	AKHR	AKHS	AKHT	AKHU	AKHV	AKHW	AKHX	AKHY	AKHZ	AKIA	AKIB	AKIC	AKID	AKIE	AKIF	AKIG	AKIH	AKIJ	AKIK	AKIL	AKIM	AKIN	AKIO	AKIP	AKIQ	AKIR	AKIS	AKIT	AKIU	AKIV	AKIW	AKIX	AKIY	AKIZ	AKJA	AKJB	AKJC	AKJD	AKJE	AKJF	AKJG	AKJH	AKJI	AKJJ	AKJK	AKJL	AKJM	AKJN	AKJO	AKJP	AKJQ	AKJR	AKJS	AKJT	AKJU	AKJV	AKJW	AKJX	AKJY	AKJZ	AKKA	AKKB	AKKC	AKKD	AKKE	AKKF	AKKG	AKKH	AKKI	AKKJ	AKKL	AKKM	AKKN	AKKO	AKKP	AKKQ	AKKR	AKKS	AKKT	AKKU	AKKV	AKKW	AKKX	AKKY	AKKZ	AKLA	AKLB	AKLC	AKLD	AKLE	AKLF	AKLG	AKLH	AKLI	AKLJ	AKLK	AKLL	AKLM	AKLN	AKLO	AKLP	AKLQ	AKLR	AKLS	AKLT	AKLU	AKLV	AKLW	AKLX	AKLY	AKLZ	AKMA	AKMB	AKMC	AKMD	AKME	AKMF	AKMG	AKMH	AKMI	AKMJ	AKMK	AKML	AKMM	AKMN	AKMO	AKMP	AKMQ	AKMR	AKMS	AKMT	AKMU	AKMV	AKMW	AKMX	AKMY	AKMZ	AKNA	AKNB	AKNC	AKND	AKNE	AKNF	AKNG	AKNH	AKNI	AKNJ	AKNK	AKNL	AKNM	AKNN	AKNO	AKNP	AKNQ	AKNR	AKNS	AKNT	AKNU	AKNV	AKNW	AKNX	AKNY	AKNZ	AKOA	AKOB	AKOC	AKOD	AKOE	AKOF	AKOG	AKOH	AKOI	AKOJ	AKOK	AKOL	AKOM	AKON	AKOO	AKOP	AKOQ	AKOR	AKOS	AKOT	AKOU	AKOV	AKOW	AKOX	AKOY	AKOZ	AKPA	AKPB	AKPC	AKPD	AKPE	AKPF	AKPG	AKPH	AKPI	AKPJ	AKPK	AKPL	AKPM	AKPN	AKPO	AKPP	AKPQ	AKPR	AKPS	AKPT	AKPU	AKPV	AKPW	AKPX	AKPY	AKPZ	AKQA	AKQB	AKQC	AKQD	AKQE	AKQF	AKQG	AKQH	AKQI	AKQJ	AKQK	AKQL	AKQM	AKQN	AKQO	AKQP	AKQQ	AKQR	AKQS	AKQT	AKQU	AKQV	AKQW	AKQX	AKQY	AKQZ	AKRA	AKRB	AKRC	AKRD	AKRE	AKRF	AKRG	AKRH	AKRI	AKRJ	AKRK	AKRL	AKRM	AKRN	AKRO	AKRP	AKRQ	AKRR	AKRS	AKRT	AKRU	AKRV	AKRW	AKRX	AKRY	AKRZ	AKSA	AKSB	AKSC	AKSD	AKSE	AKSF	AKSG	AKSH	AKSI	AKSJ	AKSK	AKSL	AKSM	AKSN	AKSO	AKSP	AKSQ	AKSR	AKSS	AKST	AKSU	AKSV	AKSW	AKSX	AKSY	AKSZ	AKTA	AKTB	AKTC	AKTD	AKTE	AKTF	AKTG	AKTH	AKTI	AKTJ	AKTK	AKTL	AKTM	AKTN	AKTO	AKTP	AKTQ	AKTR	AKTS	AKTT	AKTU	AKTV	AKTW	AKTX	AKTY	AKTZ	AKUA	AKUB	AKUC	AKUD	AKUE	AKUF	AKUG	AKUH	AKUI	AKUJ	AKUK	AKUL	AKUM	AKUN	AKUO	AKUP	AKUQ	AKUR	AKUS	AKUT	AKUU	AKUV	AKUW	AKUX	AKUY	AKUZ	AKVA	AKVB	AKVC	AKVD	AKVE	AKVF	AKVG	AKVH	AKVI	AKVJ	AKVK	AKVL	AKVM	AKVN	AKVO	AKVP	AKVQ	AKVR	AKVS	AKVT	AKVU	AKVV	AKVW	AKVX	AKVY	AKVZ	AKWA	AKWB	AKWC	AKWD	AKWE	AKWF	AKWG	AKWH	AKWI	AKWJ	AKWK	AKWL	AKWM	AKWN	AKWO	AKWP	AKWQ	AKWR	AKWS	AKWT	AKWU	AKWV	AKWW	AKWX	AKWY	AKWZ	AKXA	AKXB	AKXC	AKXD	AKXE	AKXF	AKXG	AKXH	AKXI	AKXJ	AKXK	AKXL	AKXM	AKXN	AKXO	AKXP	AKXQ	AKXR	AKXS	AKXT	AKXU	AKXV	AKXW	AKXX	AKXY	AKXZ	AKYA	AKYB	AKYC	AKYD	AKYE	AKYF	AKYG	AKYH	AKYI	AKYJ	AKYK	AKYL	AKYM	AKYN	AKYO	AKYP	AKYQ	AKYR	AKYS	AKYT	AKYU	AKYV	AKYW	AKYX	AKYY	AKYZ	AKZA	AKZB	AKZC	AKZD	AKZE	AKZF	AKZG	AKZH	AKZI	AKZJ	AKZK	AKZL	AKZM	AKZN	AKZO	AKZP	AKZQ	AKZR	AKZS	AKZT	AKZU	AKZV	AKZW	AKZX	AKZY	AKZZ
AKG - ALLIED MILITARY OPERATIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

IONS OF PROPERTY TYPES, IN ALASKA HISTORIC CONTEXT

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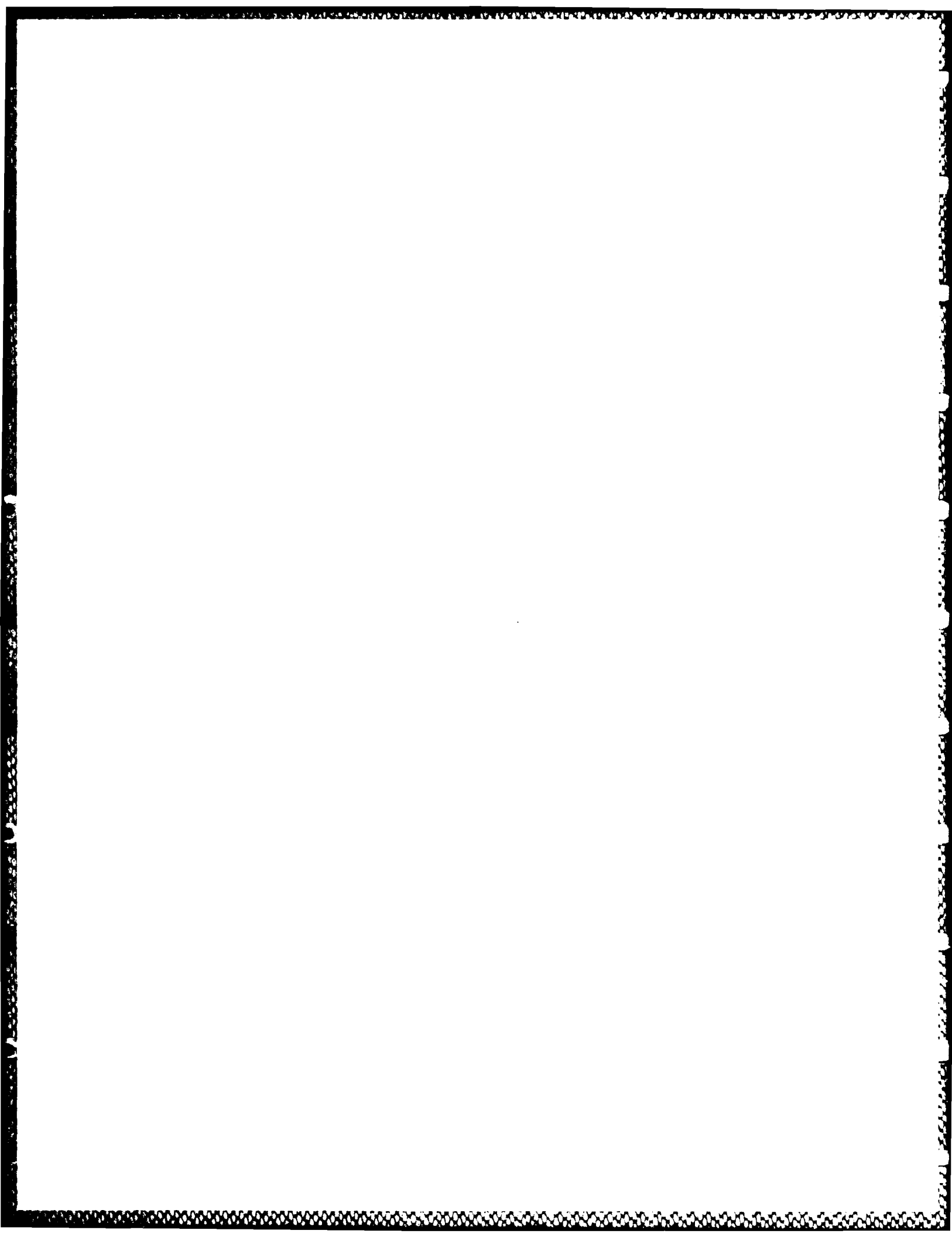


Table 4-1. Alaska Territorial Guard (ATG) Sites

Akiachak
 Akiak
 Akulurak
 Alakanuk
 Barrow
 Bethel
 Bluff
 Bristol Bay
 Candle
 Chaniliut
 Deering
 Dillingham
 Diomede
 Eek
 Egegik
 Elim
 False Pass
 Flat
 Galena
 Gambell
 Golovin
 Hamilton
 Haycock
 Hooper Bay
 Igloo
 Ikatan
 Kiana
 King Island
 Kipnuk
 Kivalina
 Kotzebue
 Koyuk
 Kwethluk
 Kwiguk
 Kwigillingok
 Marshall
 McGrath
 Mekoryuk
 Mountain Village
 Naknek
 Napakiak

Napaskiak
 Noatak
 Nome
 Noorvik
 Nulato
 Nunapitchuk
 Ohogamiut
 Paimiut
 Pastolik
 Pilot Station
 Pitka's Pont
 Point Hope
 Point Lay
 Quinhagak
 Ruby
 Russian Mission
 St. Lawrence
 St. Michael
 Savoogna
 Selawik
 Shaktoolik
 Shishmaref
 Shungnak
 Sinuk
 Solomon
 Stebbins
 Tanunak
 Teller
 Teller Mission
 Tukachak
 Unalakleet
 Wainwright
 Wales
 White Mountain

Table 4-2. Alaska Communication System (ACS) Sites

Adak Island	WXFG
Amchitka Island	WXFL
Anchorage	WXF
Annette Island	WXM
Atka Island	WXFK
Atti	WXFR
Bethel	WXI
Big Delta	WSFF
Cold Bay	WSFP
Cordova	WXU
Craig	WXO
Dutch Harbor/Unalaska	WXFO
Excursion Inlet	WXFC
Fairbanks	WXP
Flat	WXL
Fort Glenn	WXFN
Galena	WXFH
Gulkana	WXFE
Haines	WXV
Juneau	WXA
Kanakanak	WXK
Ketchikan	WXH
Kiska Island	WSFUU
Kodiak	WXF
Kotzebue	WXW
McGrath	WXFI
Naknek	WXFJ
Nome	WXY
Northway	WXFD
Nulato	WXZ
Petersburg	WXQ
Point Barrow	WXB
Port Heiden	WXFQ
Seattle	WVD
Seward	WXR
Shemya Island	WXFT
Sitka	WXC
Skagway	WXS
St. George Island	WWD
St. Paul Island	WXFW
Tanacross	WSFB
Valdez	WXJ
Wainwright	KTPW
Whittier	WXFM
Wrangell	WXG
Yakutat	WXD

Table 4-3. Army Airway Communication (AACS) Sites

Adak Island	WYUQ
Agattu Island	WUUK
Amchitka	WXFL
Alexai Point	WUUE
Amchitka	WYUP
Annette Island	WYZF
Atka Island	WUUA
Attu Island	WUUD
Buldir	WUUL
Chaniliut	WUUT
Chuginadak	WUUD
Cordova	WYSC
Edmonton	WXAB
Fort Glenn	WYSI
Fort Richardson	WZX
Fort Glenn	WXFN
Galena	WYSM
Golovin	WUUQ
Kaltag	WUW
Kigun	WUUI
Kodiak	WYSK
Koyuk	WUUN
Ladd Field	WZY
McGrath	WYSE
Fort Morrow/Port Heiden	WYZW
Naknek	WYSD
Nenana	WUUM
Nome	WYSG
Northway	WYSL
Nunivak Island	WUUS
Ogliuga Island	WUUB
Point Hope	WUUV
Fort Randall/Cold Bay	WYSH
Seguam Island	WUUH
Shemya Island	WUUF
Solomon	WUUR
St. Matthews Island	WUUI
Teller	WUUI
Wales	WUUP
Yakutat	WYZY

Table 4-4. Civil Aeronautics Administration Communications (CAA) Sites

Adak	(KIS)
Aniak	KHDA
Annette	KEQF
Bethel	KMZI
Big Delta	KHG
Biorka	KEQU
Caton/Sanak	KWVS
Chirikof	KWVR
Cold Bay	KHEC
Cordova	KEOU
Fairbanks	KCDS
Farewell	KHDF
Galena	KHDX
Gambell	KMVE
Gulkana	KHDH
Haines	KEQT
Hog Island	KHEG
Homer	KHDZ
Iliamna	KMZO
Juneau	KEAA
Kenai	KHDK
Lake Minchumina	KHDL
McGrath	KMZH
Middleton Island	KWUM
Moses Point	KmZZ
Naknek	KMZY
Nome	KEQO
Northway	KHDI
Petersburg	KEQV
Port Heiden	KCCK
Ruby	KEQQ
Sand Point	KYWQ
Sheep Mountain	KWEVA
Summit	KEQR
Talkeetna	KEQS
Tanacross	KHDN
Umnak	KHEU
Unalakleet	KYWU
Unalga Island	KWVW
Woody Island	WMZO
Yakataga	KEAV
Yakutat	WXD

summary reports of wartime construction in Alaska for the Army and Navy, respectively. Limited supplemental data was collected during the field reconnaissance portion of this study (Section 3.4) by Envirosphere and BTI personnel, and additional documentary data has also been incorporated. Locations of structure types are given only when known; lists may be incomplete.

Housing and Personnel Facilities

Army winterized tents: prefabricated wood floors and sides, with built-in door and wood skeletal framework to support standard Army 16' by 16' pyramidal tent. Used with Sibley coal stoves and oil burners for temporary troop housing throughout Alaska.

Jamesway hut: prefabricated wood floors, with laminated wood hoop framework covered by rubberized canvas tent; 16' wide and multiple lengths of 8'; half-cylinder in profile; easily transported by aircraft and rapidly erected in the field. Primarily used as temporary shelter for Air Corps personnel.

Stout houses: box-like prefabricated hut of wood composition panels; 12' by 16' with low pitch roof; easily transported by aircraft and rapidly erected in the field. Primarily used as temporary shelter for Air Corps personnel.

Yakutat hut: prefabricated wood frame hut, 16' by 16' with low pitch roof; this series first erected at Yakutat. Primarily used as temporary personnel shelters until more permanent buildings could be erected; also used as equipment shelters. A standard Army "KD" (knock down) type structure, the Alaska production run was manufactured in the Pacific Northwest.

Skid sheds: prefabricated wood frame hut, mounted on skids; 12' by 30'; up to 12-man capacity. Also referred to as a wanigan.

Cabanas: prefabricated wood frame hut, 16' by 20'; 8-man capacity. Used by Navy. Similar in design and construction to the Stout and Yakutat huts.

Quonset hut: prefabricated metal building, semi-circular shape; two sizes: 16' by 36' and 24' by 60'; corrugated metal exterior. Smaller size widely used in Alaska, primarily for barracks, although also used for administration and recreation buildings, warehouses, latrines etc. Larger size were used almost exclusively for hospitals. Units could be joined end to end or at right angles for larger structures. Of Navy design, but copied from the British Nissen Hut of World War I.

Stran Steel hut: prefabricated metal buildings, similar to Quonset huts; two sizes: 20' by 48' and 40' by 100'. Used by the Navy.

Pacific Huts: precut/prefabricated 16' by 36' unit, built of plywood; form similar to Quonset hut; compact to ship, light weight, low cost, easy to erect, windproof and waterproof. Widely used in Alaska, primarily for barracks. Required only 7 percent critical materials. Built by Pacific Huts, Inc., Tacoma and Seattle, Washington.

CCC type buildings: prefabricated reusable wood panel buildings shipped from Civilian Conservation Corps sites; wood siding and tar paper roofs; bulky to ship, subject to wind and water leakage. Used for barracks, mess halls, latrines and baths, administration buildings, and warehouses early in the war.

Army theater-of-operations type barracks (T/O): temporary wood structures based on standardized plans; 20' wide, lengths up to 160'; constructed primarily of rough lumber and tar paper, cut and assembled on-site; required only unskilled labor for erection. Used for barracks, mess halls, latrines and baths, administration and recreation buildings, laundries, shops, bakeries, dry cleaning plants, warehouses, etc. US forces housed Canadian troops but US personnel serving in Canada used Canadian facilities.

Army mobilization type buildings (Series 700): semi-permanent wood structures based on standardized plans; shiplap wood siding and shingle roofs built on concrete piers; required skilled labor for erection. Construction generally discontinued after beginning of war. Used for barracks, warehouses, recreation and administration buildings (Mears/Dutch Harbor, Ray/Sitka, Greely/Kodiak, Richardson, Seward, and Juneau).

Navy standard housing: permanent wood structures based on standardized plans; central heat (Sitka).

Navy standard barracks: semi-permanent wood structures based on standardized plans; H-shaped, 2-story; capacity of 136 men, 2 men per room; hot water heat (Sitka, Kodiak, Dutch Harbor).

Defense housing: wood duplex structures based on standardized plans; cedar siding and fiberboard interior; oil-fired hot air heat (Sitka, Kodiak, Dutch Harbor).

Nissen hut. British semi-circular prefabricated housing with steel frame on a slab foundation and corrugated steel siding; 16, 24, 30 ft. widths, with 6' length increments; similar to the Quonset Hut, for which it provided the model. US forces housed Canadian troops in Alaska, but US personnel serving in Canada used Canadian facilities, primarily Nissen Huts.

Other building types: permanent facilities of reinforced concrete and steel were erected at Ladd Field, with similar but less costly facilities built at Richardson, Greely, Mears, and Ray. Temporary facilities were often made of timber in combination with Quonset, Stran, or Pacific hut structures.

Warehouse Facilities

Army theater-of-operations type: temporary wood structures based on standardized plans; 20' wide, with lengths from 60' to 180'; three heavier types 50', 100', and 150' wide by 180' long; constructed primarily of rough lumber and tar paper, cut and assembled on-site; required only unskilled labor. Extensively used in Alaska (see housing and personnel facilities, above).

CCC type buildings: prefabricated wood panel buildings shipped from Civilian Conservation Corps sites; wood siding and tar paper roofs. Extensively used in Alaska (see housing and personnel facilities, above).

Loxstave units: prefabricated wood panel buildings with interlocking corners; lightest of all warehouse types.

Army mobilization type (Series 700): semi-permanent wood buildings based on standardized plans; shiplap wood siding and shingle roofs; required skilled labor for erection; most widely used size was 60' by 153'. Peacetime design used mainly at Fort Richardson (see housing and personnel facilities, above).

Transit sheds: heavy timber frame structure with concrete floors; built in various sizes; largest noted: 181' by 400' (Excursion Inlet).

Cowin huts: prefabricated steel, 40' by 80', semi-circular shape; use discontinued in Alaska in 1943.

Quonset huts: prefabricated metal building, semi-circular shape; corrugated metal exterior; 16' by 36' size, sometimes used for warehousing purposes (see housing and personnel facilities, above).

Other warehouse types: permanent warehouses of reinforced concrete were built at several sites (see housing and personnel facilities, above). Warehouses used as cold storage facilities usually employed a liquid freon refrigerant system, although an ammonia system was used at Ladd Field and Fort Richardson.

Ammunition Storage

Concrete igloos 26' by 40', 60', or 80'. Thirty built at Fort Richardson, 16 at Ladd Field, and several others built elsewhere, including Chilkoot Barracks.

Corrugated metal structures. "Elephant shelters," Quonset huts, and Cowin huts used in most other locations; usually buried at grade or reinforced with banked earth or with concrete, as at Dutch Harbor.

Gasoline and Oil Storage

25,000 and 50,000 gallon welded steel units, and 500, 5000, and 10,000 barrel bolted steel units were used for gasoline storage. At Fort Richardson, 24,000 barrel welded steel tanks were also used. All steel tanks were site-assembled except the 25,000 gallon tanks, which were shipped on the decks of transport ships.

Wood stave tanks often used for diesel and fuel oil storage. At Fort Richardson, 10,000 barrel reinforced concrete tanks were used.

Fifty and fifty-five gallon POL drum storage was standard at smaller bases.

Distribution piping 3" to 12" diameter, standard weight or light weight spiral welded pipe types. Gravity feed distribution system used wherever possible; pumping system used elsewhere. "Aqua" system installed at Ladd Field and Elmendorf Field, but considered unsuited for Alaska.

Airfield Facilities

Runway surfacing materials:

Concrete (Fort Richardson, Yakutat, Fort Greely, Sitka, Kodiak, Ladd, Fort Mears)
Asphalt/bitumen (Fort Richardson, Bethel, Big Delta, Northway, McGrath, Cold Bay, Mile 26, Nome, Annette)
Pumice stone (Fort Morrow)
Sand/gravel/crushed rock (Fort Randall, Dutch Harbor, Tanacross)
Pierced steel planking (Attu, Kiska, Atka, Shemya, Amchitka, Adak, Ogluuga, Chiniak, Fort Glenn)(Photo 4-1)
Volcanic cinder and ash (Fort Glenn, St. Paul)

Related facilities:

Catapults and arresting gear (Navy airfields only: Sitka, Dutch Harbor)
Revetments and hardstand bunkers
Taxiways, aprons, and parking areas
Control and signal towers
Fueling facilities
Specialized repair shops

Hangars

Army base and operation hangars: permanent, with massive steel arches set in concrete abutments; basic dimensions 270' by 270'; two-story shops and office wings on both sides, with 60' by 240' addition on one end; concrete floors and copper roofs; central heating plant. Built only at Fort Richardson.

Army base hangars: permanent, with large steel trusses supported by steel columns on concrete footings, wood sheathed and shingle-covered exterior; overall dimensions 271' by 327'. Built only at Ladd Field.

Navy fighter hangars: permanent, 50' by 184' (Kodiak).

Temporary or Yakutat hangars: peacetime design, first erected in Alaska at Yakutat; steel trusses supported on steel columns, braced by steel roof members and walls; main floor 120' by 220' with 20' wide two-story lean-tos on both sides (Fort Richardson, Yakutat, Adak).

Birchwood hangars: constructed of 150' bowstring trusses supported by timber columns, with 25' wide lean-to on both sides; concrete floor and foundations; overall dimensions 202' by either 200' or 300' (Ladd, Nome, Galena, Mile 26, Fort Glenn, Amchitka, Shemya).

"T" or Kodiak hangars: all-wood design with bowstring or Howe trusses supported on timber columns; concrete floors and foundations; T-shaped, with top of "T" 129' by 47' and stem of "T" 40' by 55' (Ladd, Fort Ray/Sitka, Nome, Fort Randall, Fort Morrow, Atka, Amchitka, Attu, Shemya, Fort Mears/Dutch Harbor).

Temporary nose hangars: various types, all of temporary construction; usually of light wood, sometimes of canvas covered pipe frame for shelter, repairs.

Photo 4-1

Pierced Steel Plank (Marsden Mat)

Runway at Fort Glenn (c.1942)

Source: USAF Photographic Collection, National Air
and Space Museum, Smithsonian Institution.

Navy seaplane: permanent hangar, 254' by 186', plus lean-tos (Kodiak, Sitka).

Navy blast pen hangar: permanent hangar, 115 by 310 ft. (Dutch Harbor).

Navy Kingfisher hangar: semi-permanent, 50 by 60 ft. (Adak).

Navy PBY hangar: semi-permanent, 48 by 128 ft (Adak).

Seaplane Facilities:

Concrete seaplane ramps with counterbalance (Annette, Sitka, Kodiak, Dutch Harbor).

Timber seaplane ramps (Yakutat, Shemya, Attu, Adak, Chernofski).

Timber seaplane ramp with retractable pierced steel plank surface with roller arrangement (Kiska).

Installations usually also included fueling facilities and control/signal towers.

Docking Facilities

Ship docks: 400 by 70 ft. standard, modified according to local conditions; treated (creosoted) and untreated piling, plank decking.

Lighter docks: non-standard, constructed according to local condition, piling, sunken/overturned barges/steel pontoon construction used.

LST docks/ramps: Rock fill and pile docks for unloading vehicles and supplies from vessels with forward doors designed for shallow-water beach docking.

Submarine docks: similar in construction to ship docks.

Bargeways

Ferry slips (Sitka)

Dock/port facilities: stiffleg 75 ton derricks, traveling gantry cranes, railroad trackage, counterbalanced transfer bridges; floating derricks.

Heating systems

Central steam heat distribution systems at Fort Richardson, Ladd Field. Hospitals with self-contained steam heating plants. Coal (Sibley) stoves; pot-type, atomizing oil burners. Wood-burning stoves. Electric ranges.

Artillery Facilities

Panama mounts: Center concrete plug, 360 degree concrete traverse for trails; 155mm rifle emplacement.

6 inch/8 inch emplacements: Custom battery mounts, bunker and turret design.

90mm anti-PT-boat emplacements (AMTB).

SCR-296: Surface vessel radar used as part of fire control net.

SCR-582: Surface vessel radar/harbor surveillance, used as part of fire control net; available 1943.

SCR-268: Searchlight antiaircraft targeting radar.

88mm mortar emplacement: Anti-amphibious infantry assault defense pits.

37mm/75mm/90mm/.50 cal/.30 cal AA: Anti-aircraft emplacements.

Battery support/fire control facilities: Reinforced concrete, earthwork; grade/below grade/above grade structures with communicating trenches: magazines, command stations, observation posts, searchlight/power plant positions, fire control posts, base end stations, subcable/landline communications.

Aircraft Warning System (AWS) Facilities

SCR-270 (mobile)/SCR 271 (fixed): Aircraft detector radar, used early in the war; required 360 degree uninterrupted sweep, necessitating emplacement on a peak.

SCR-588: Aircraft detector radar introduced in 1943; required 180 degree sweep and natural amphitheater emplacement.

AWS facilities: Housing, utilities for up to 50 men; transmission lines, access roads/tramways, docks.

Shops

Machine shops/welding shops: Tool and die, sheet metal, plate, blacksmithing.

Trade/craft shops: Carpentry, plumbing, electrical.

Ordinance shops: Torpedo, bomb, ordnance, armory.

General/special repair: Vehicle, component, engine; mobile repair units.

Roads/Bridges

No standard design; widths to 30 ft.; lateral drainage ditching. Surfaces: gravel, sand, quarry rock/crushed stone, volcanic ash, corduroy (interior); concrete/asphalt. Bridging: timber/plank, steel pier; clearspan without center stream pier, bracing (to eliminate icing load). Culverts: timber and plank.

Utilities

Electric: two 3000KW in-place constructed units at Fort Richardson; one 1500 KVA in-place constructed unit at Ladd Field. Diesel-powered units 25KW up, used independently or in series. Purchased power when available.

Water supply: dammed stream ponds; wells. Supply via wood-stave pipe. Utilidor with preheated/steam pipe in main.

Sewage disposal: sewage treatment plant at Ladd Field. Elsewhere untreated sewage discharged into nearest outfall; pit latrines predominant means of sewage disposal.

Railroad Facilities

Whittier Cutoff, Alaska Railroad: 14 mi. track, two tunnels (5000 and 13,000 ft.), yard, transfer and port facilities; completed 1943.

Yakutat and Southern Railroad: 86 mi. existing track, 10 mi. repaired; used 1942-1945.

Copper River and Northwestern Railroad: 186 mi. abandoned track, 13 mi. repaired; used 1942-1943.

Fort Richardson Spur: 13.4 mi. track, yards; built, used 1940-1945.

Ladd Field Spur: 9.9 mi. track; built, used 1940-1945.

Alaska Railroad: 480.7 mi. existing track; used 1940-1945.

White Pass and Yukon Railroad: 102 mi. track, yards, port and transfer facilities; used 1942-1946.

4.5 Identification of Property Types

4.5.1 Definition of Property Types: Methodology

The definition of a historic context and the development of themes within that context serve to establish the bases for evaluations of significance. Table 4-5 is a list of property types abstracted from information available on Alaska in World War II. These types are derived from an analysis of facilities which were constructed, adapted or appropriated by the military in order to carry out its mission. The majority are associated with the Allied Military Operations theme, though as pointed out above, the fact that Alaska lacked a developed support infrastructure meant that it was difficult to separate out the functions of facilities in the Transportation/Logistics and Communications themes since the military mission entailed the development of these ancillary facilities.

The property types identified are designed to flag the material, functional correlates of the military mission. They represent recurring facility categories as well as anomalous associated remains. They are not designed to be at the equivalent levels of importance or complexity, since in most cases

Table 4-5. Property Types by Theme, Associated with World War II in Alaska
Historic Context

Allied Military Operations Theme

battle site
garrison
Marine barracks
Naval Operating Base (NOB)
submarine base
PT-boat base
seaplane facilities
catapult launching facilities
coast defenses
combat airfield
staging airfield
emergency landing field
dispersion airfield
hangar
antiaircraft emplacement
aircraft warning system (AWS)
observation post
headquarters
ordnance dump
hospital

Japanese Occupation Theme

battle site
garrison
observation post
seaplane facilities
hangar
antiaircraft emplacement
coast defenses
submarine base
headquarters
ordnance dump
aircraft warning system
hospital

Engineering/Cold Weather Adaptation Theme

quarry/gravel pit/borrow area
ALCAN Highway
CANOL Pipeline
railroad
oil exploration

Lend Lease Theme

liaison site
ALSIB airfield

Table 4-5 (Cont'd)

Transportation/Logistics Theme

port of entry
dock facilities
breakwater/causeway/jetty
tank farm/fuel dump
repair shops
storage/depot
CAA airfield

Communications theme

Alaska Communications System (ACS)
submarine cable site
Army Airways Communication System (AACS)
Civil Aeronautics Administration communication (CAA)
radar beacons (YH/YG)
radio range
LORAN station
direction finding (D/F) radio
VHF station
Navy radio station
weather station

Native and Civilian Concerns theme

Aleut removal site
Aleut relocation site
Alaska Territorial Guard (ATG) site
construction camp

Residual categories

downed aircraft
watercraft
vehicles

significance derives from the associations with the context rather than the characteristics of the remains themselves. Generally, the property types can be further subdivided into fairly standard component structures, which are not significant in and of themselves on architectural or engineering grounds. By the same token, the same remains may pertain to more than one function and/or theme, serially or simultaneously.

4.5.2 World War II Property Types in Alaska

The ultimate military mission is to engage the enemy. With the exception of aerial and naval engagements which left little in the way of recoverable remains, battle sites in Alaska are limited to Dutch Harbor/Unalaska, Attu, and, arguably, Kiska. Essentially all remaining military sites in Alaska represent pre-emptive occupation and/or support facilities. Most sites had garrison facilities for support and combat troops. While the view of the Navy was that seapower was pre-eminent for the North Pacific campaign, the mobility of ships means that little in the way of direct material remains exist after the fact. What does exist are the shore facilities for such ships found at Naval Operating Bases. Other subsidiary naval property types were PT-boat bases, submarine bases, and Marine barracks (a subset of garrisons). Additional types associated specifically with naval aviation (scouting/patrol, bombing, search and rescue) are seaplane facilities and catapult launching facilities. Related primarily to defense against naval or amphibious attack were coastal defense facilities with associated fire control, detection, searchlight, submarine net and minefield facilities.

The maritime focus of the war in Alaska was matched in importance by the aerial component. In fact, the Army contribution was both quantitatively and qualitatively centered on aviation facilities. These property types include forward combat airfields (those from which combat missions were flown resulting in engagement of the enemy; those bases whose aircraft did not see actual combat no matter what the expectations of enemy action at the time are excluded), staging airfields (direct support, but not actual combat), emergency landing fields and dispersion airfields. Associated facilities include hangars, which exemplify the nature of and investment in air operations, antiaircraft emplacements and aircraft warning system (AWS) facilities. Other operational property types include a catch-all for small, marginal installations with limited function, importance and facilities, characterized as observation posts. Within the context of garrison bases are found other support facilities identified by such property types as Headquarters, ordnance dumps and hospitals. The Japanese Occupation theme has many of the same property types, though reduced in inventory and magnitude due to the tenuous position of the Japanese troops in the Aleutians: battle site, garrison, observation post, seaplane facilities, hangars, antiaircraft emplacement, coast defenses, submarine base, headquarters, ordnance dump, AWS, hospital.

Under the Transportation/Logistics theme several overlapping property types are rather arbitrarily separated from military operations. The Port of Entry (POE) is an inclusive property type, reflecting the essential dependence on shipping for supply. The associated dock/surface craft facilities and breakwater/causeway port improvements exemplify the level of effort and the importance of moving supplies to support the military mission and sustain the

civilian population. The CAA airfields - those airfields which were built in conjunction with the military buildup, but which essentially lacked military strategic or tactical significance in the Alaskan campaign - were important in opening up Alaska. Other property types exemplifying this thematic function are tank farm/fuel depot, storage depot and repair shops.

Under the Engineering/Cold Weather theme are found specific aspects of the construction and operation of facilities most properly subsumed under other thematic headings. The particular property types of engineering importance are quarry/gravel pit/borrow areas (which altered the landscape in construction), the ALCAN Highway, the CANOL pipeline, railroad construction (specifically the development of the Whittier cut off) and oil exploration development and activities. These projects were major in term of magnitude and often in terms of engineering difficulty due to harsh conditions, tight schedules, problems of supply and pioneering and/or ad hoc design. For the most part, they would not have been undertaken in the absence of hostilities and were of greater significance to post-war non-military development of Alaska than to the war effort per se.

The property types associated with the Lend Lease theme are the transfer points/liaison facilities and the ALSIB airfields. While the magnitude of the mission which the Lend Lease program represented was important, the associated material remains are discrete and minimally specialized.

While the theme of Communications was of major importance to Alaska in World War II and the development of Alaska in general, the material correlates are minimal. Identified property type heading include Alaska Communications System (ACS) sites, Army Airways Communications System (AACS) sites, submarine cable sites, CAA radio stations, YH/YG radar beacons, radio ranges, LORAN, direction finding (D/F) radio, VHF communications, Navy radio stations and weather stations. AWS facilities, though operated by ACS/Signal Corps personnel, are classed under military operations due to their essentially tactical military function.

The Native and Civilian Activities theme recognizes the effect which the war had on the lives of Native and non-native/non-military peoples in Alaska. Of particular note are the material remains associated with Aleut removal and relocation, representing one of the few instances in which the US government has evacuated civilian personnel from a war zone. The Alaska Territorial Guard sites represent an attempt to utilize Native civilian personnel for auxiliary military purposes, resulting in politicization of groups which had previously been excluded from mainstream activities. An additional property type is the civilian construction camp which existed to house non-military personnel, usually brought in from the outside and housed in ad hoc facilities due to a lack of adequate infrastructure in Alaska. These camps often represented a civilian presence in an active war zone.

An additional set of property types associated with World War II in Alaska concerns aircraft, watercraft and vehicular remains. These may be subsumed under Military Operations (Allied and/or Japanese), Transportation/Logistics, Lend Lease or Cold Weather/Engineering themes according to function and conditions of deposition. The location of these remains is usually fortuitous (as often is their discovery), so that they relate directly to the historic context rather than to the associated, recognized site, if any. These remains are discussed in detail in Appendices C and D.

A matrix showing the relationship between sites and property types associated with particular themes of the World War II in Alaska historic context is presented in Figure 4-1. The location of the sites associated with the context are shown in Figure 4-2.

4.6 Evaluation of Significance

Evaluation is the process of determining whether identified properties meet defined criteria of significance in relation to a historic context(s). Criteria for significance (and eligibility for the National Register of Historic Places) are set forth in 36 CFR 60: The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons significant in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.

Evaluations of significance for this project present special problems relating to the fact that different kinds of "properties" - specific sites (Section 4.3) as opposed to structure types (Section 4.4) or property types (Section 4.5) - must be considered. As noted above, the National Register of Historic Places recognizes "properties" as districts, sites, buildings, structures, and objects. The specialized objective of a portion of this study (the DERA cultural resources mitigation plan) requires that both specific sites and generic property types be considered. Unfortunately, the relationship between these two kinds of properties is complex. Any one property type (e.g., Naval Air Station) may be represented by several sites. At the same time any one site may be composed of dozens of structure types (e.g., Quonset huts, docks, etc.) and multiple property types. Furthermore, the organization and classification of these various types can be done in a variety of ways. For example, structures can be classified by architectural type or functional type (a Quonset hut may have been used as an office, a mess hall, or as barracks).

On the basis of the background research conducted for this project it was determined that significance criterion "A" would be the one most relevant and most often used to assess significance (see below). For this reason it was decided to use "sites," rather than "property-types," as the primary basis for analysis. It is, however, recognized that some particular property types may be significant when evaluated against other criteria. At the same time,

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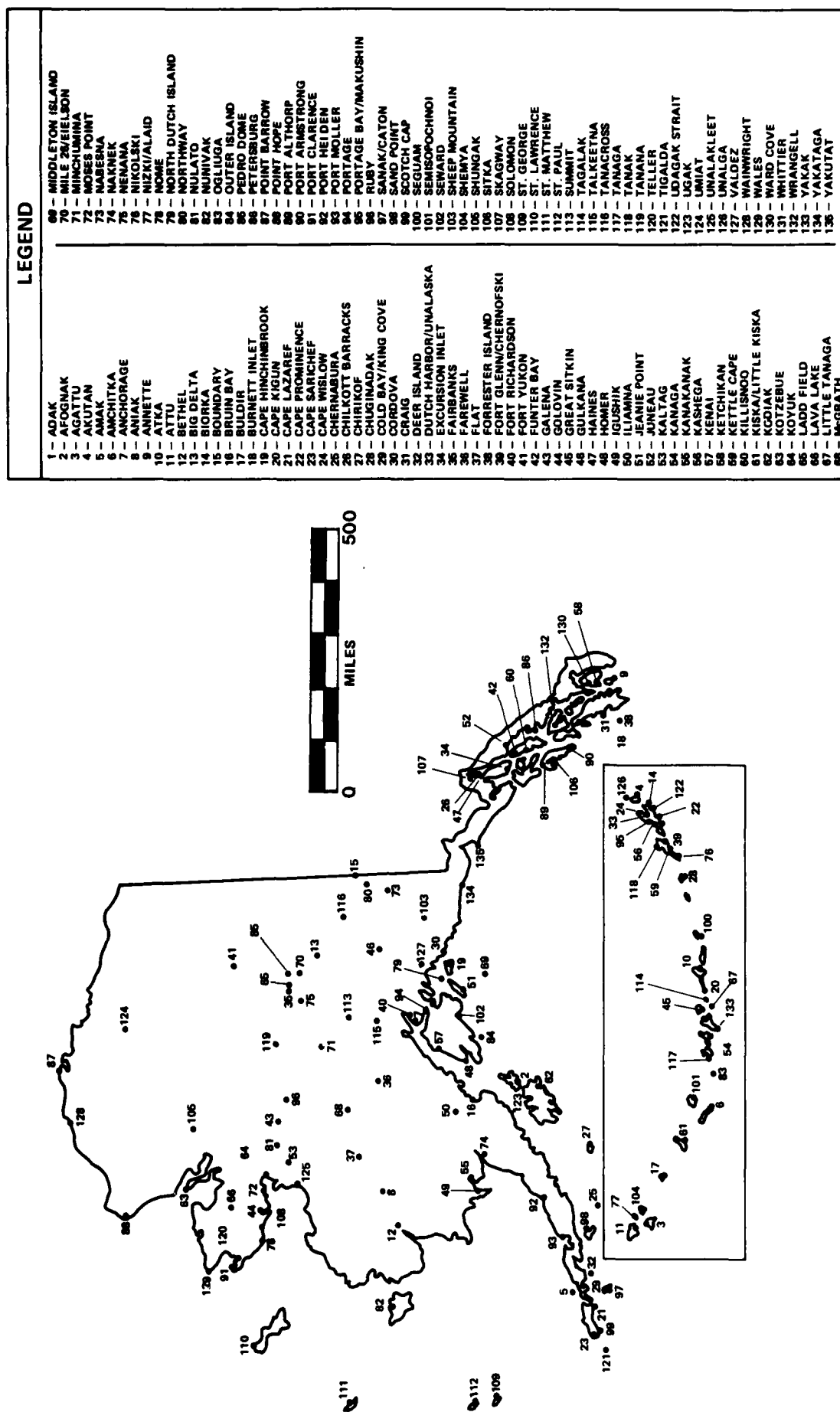
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IONS OF PROPERTY TYPES, II IN ALASKA HISTORIC CONTEXT

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Figure 4-2
LOCATIONS OF SITES ASSOCIATED WITH
THE WORLD WAR II IN ALASKA HISTORIC CONTEXT



however, representatives of individually significant property types will in most cases be components of sites. This reinforces the decision to use sites as the principal unit of study, and considerably simplifies the development of management plans.

Some limited instances have been identified where criteria B and C may apply. The relevance of these criteria in the assessment of the significance of specific properties is noted, as appropriate, in Section 5.0.

However, of the vast quantity of military buildings and structures erected prior to and during World War II in Alaska few, if any, appear to be eligible for the National Register of Historic Places as individual historic properties.

Normally the National Register evaluation process involves the on-site inspection and inventory of all properties, but for this study only historical records and field sampling could be utilized. Principal data sources on construction are Bush (1944), USN (1952) and the construction drawing repositories at the Alaska District of the Corps of Engineers, the Naval Facilities Engineering Command Historical Information Office, and the Washington National Records Center. As noted in Section 3.4, limited supplemental data was collected during the field reconnaissance portion of the project. These data, summarized in Section 4.4, suggest that few World War II building and structure types erected in Alaska were unique to it and, in fact, most were not well suited to the rigors of the Alaskan climate. America's war mobilization effort depended in large part on the production and deployment of standardized or prefabricated buildings whose primary attributes were low initial cost, ease of shipment, speedy erection, and minimal usage of critical war materials. The ubiquitous Quonset huts, standardized wood frame Army and Navy quarters and operations buildings, and earth-covered ammunition igloos sprang up wherever the military settled, regardless of geographic location.

The majority of military structures erected in Alaska during the war were of temporary construction, meant to provide either immediate shelter or, at most, to serve only for the war's duration. The "immediate shelter" category includes Army winterized tents, Jamesway huts, Stout houses, Yakutat huts, skid sheds, Cowin huts, Loxstave units, and Navy cabanas. It is doubtful that unmodified examples of these structures remain intact anywhere in Alaska unless they have been protected from the weather.

The "shelter for the duration" category includes Quonset huts, Nissen huts, Stran Steel huts, Civilian Conservation Corps prefabricated buildings, Yakutat hangars, and Army theater-of-operations buildings. Examples of these structures survive, albeit in predominantly deteriorated condition, at many Alaskan World War II defense sites, and some even remain where clean-up operations have taken place. None of these building types are unique to Alaska (although the Yakutat hangars were first erected in that location), so decisions to preserve extant structures should be based on an evaluation of their context in the history of each site.

There are two other categories of World War II military structures: semipermanent and permanent. Numerically they represent a small percentage of all structures erected, but being of sounder construction they have often been occupied and maintained (except where physically inaccessible) for long periods of time, some up to the present day. Semipermanent structures include Army and Navy mobilization type buildings, Birchwood and Kodiak hangars,

defense housing, and Navy Kingfisher and PBY hangars. Permanent structures include Navy standardized housing and other structures, Army base and operations hangars, and Navy fighter, blast pen, and seaplane hangars. Like the "shelter for the duration" buildings, none of these semipermanent or permanent structures appear to be unique to Alaska, so decisions to preserve extant structures should be based on an evaluation of their context in the history of each site.

Finally, there are many types of "infrastructure" facilities such as roads, bridges, runways, POL and ammunition storage, utility systems, docks, and railroads, as well as artillery emplacements and aircraft warning sites and their attendant structures. While most were of conventional construction, they were often uniquely adapted to withstand the harsh Alaskan climate or its unusual topography. Again, decisions to preserve these types of structures, many of which remain intact or mostly so, should be based on an evaluation of their context in the history of each site.

A first step in assessing the significance of the sites relevant the World War II in Alaska context is to determine at what level (national, state, or local) they are significant. This task is simplified somewhat by the fact that in 1985 portions of seven sites relevant to the context (Attu, Kiska, Dutch Harbor/Unalaska, Kodiak Adak, Ladd Field, and Sitka) were declared National Historic Landmarks (see Section 5.1.4) and were thus determined to possess national significance. Other sites related to the context are also being considered for NHL designation.

To have national significance a property must "help us understand the history of the nation by illustrating the nationwide impact of events or persons associated with the property, its architectural type or style, or information potential. A nationally significant property is of exceptional value in representing or illustrating an important theme in the history of the nation" (NPS 1982:15). In addition, "National Historic Landmark designation is reserved for resources which by strength and clarity of historic association, architectural or design excellence, or extraordinary information content are or clearly have the potential to be publicly and professionally recognized, understood, and appreciated for their significance to the Nation as a whole" (36 CFR 65.9a).

The vast majority of the sites identified in Section 4.3.2 fail to meet these standards. Careful consideration of the overview for the context (Section 2.0) reveals that most sites warrant little more than passing mention. Still fewer sites can be said to have had demonstrably major roles in the war effort. What is clearly apparent is the impact the war had on Alaska. The influx of personnel, material, and money forever changed the relationship of Alaska to the rest of the United States and caused even greater changes within the state. Both types of changes are directly related to the development of a substantial military infrastructure, much of which, especially those aspects relating to transportation, logistics and communication, became available for non-military uses at the conclusion of the war. Properties significant at the state level are those that help "us to understand the history of the state as a whole by illuminating the statewide impact of events...associated with the property...[and/or] illustrate a theme that is important to the history of the state" (NPS 1982:14). Many of the sites associated with the World War II in Alaska context, especially when they are considered as a group, appear to have at least the potential for meeting one or both of these standards.

It is also apparent that many of the sites enumerated in Section 4.3.2 had little if any impact on the course of the war or the subsequent development of Alaska or the communities in which they were situated. Generally there are small, isolated, single function properties which are one of numerous similar properties found statewide. In addition, many are/were located in isolated areas and are not associated with identifiable communities.

It is the position taken here that in most cases properties associated with the World War II in Alaska historic context are potentially significant at the state level. (Those few properties significant at the national level are also significant at the state level.) However, in order to be significant, properties must also possess integrity. Integrity depends upon the survival of intact physical remnants of the property. In general, the majority of the property must be intact or undisturbed (NPS 1982:38). This is a special concern to the World War II in Alaska context because information on the current condition of many of the sites relevant to the context is unknown. The ramifications of this for preservation planning are discussed in section 5.0.

Another test of integrity is whether or not the property retains the identity or character for which it is important. "A property such as a district [or site as used in this study] is eligible [for the National Register of Historic Places] if it conveys overall a sense of time and place, even though some of the individual sites, buildings, structures, or objects within the district may have been altered and newer intrusions may have been added" (NPS 1982:39). It is recognized that all properties change over time and a property need not retain all the characteristics that it had during its period of significance. A property significant under criterion A is eligible for the National Register "if it remains in the place where it was during its important association and if it retains enough of its historic appearance to recall that association" (NPS 1982:40).

An additional consideration especially relevant to the World War II in Alaska context is the fact that a property achieving significance within the last 50 years is eligible for the National Register only if it is of "exceptional importance." The 50 year criterion is somewhat arbitrary. Its purpose is to ensure that sufficient historical perspective can be applied to evaluation of significance. Although the preponderant majority of properties associated with the context are less than 50 years old, they are rapidly approaching that age. The recognition of the exceptional importance of World War II in the history of the United States as a whole and the State of Alaska may be taken as a given and is supported by the recent designation of several sites important to understanding the context as National Historic Landmarks (see Section 5.1.4).

A final factor relating to both the question of integrity and the consideration of the 50 years criterion is the fact that many of the physical remains associated with the context were designed and erected as "temporary" structures. No references to anticipated useful life of the standardized structures used in Alaska during World War II were located during this study. However, standardized British huttled accommodations such as Nissen huts (upon which Quonset and Pacific huts were based) were intended to last a maximum of 15 years (Robertson 1983:48). What this means is that many of the physical remains relative to a proper understanding and appreciation of the context are

5.0 A RECOMMENDED HISTORIC PRESERVATION MANAGEMENT PLAN FOR WORLD WAR II DEPARTMENT OF DEFENSE SITES IN ALASKA

In the course of data collection and analysis for this study, project personnel were exposed to a vast array of opinions regarding the "proper" scope of any preservation plan or DERA cultural resources mitigation plan for Alaska. These varied from the suggestion that all physical remains associated with World War II be preserved in situ as a memorial, to the belief that all such remains are a dangerous eyesore and should be totally "cleaned-up." In preparing this section and Section 6.0 a basic premise has been that truly realistic and functional plans would require an approach midway between these two extremes.

As noted in the previous section, only a small percentage of the physical remnants of World War II or Cold War military construction in Alaska appear to be potentially significant independent of the historic contexts developed for this study. Other potentially significant remains owe their significance to their historic association with World War II or the Cold War. In other words, they satisfy criteria for National Register eligibility.

In determining the historic resource value (and appropriateness for inclusion in a comprehensive preservation plan) of the sites associated with historic contexts, the following factors (following NHPA section 110 guidelines; see Section 5.1.3) have been employed:

- o level of significance
- o integrity
- o rarity
- o research/information value
- o interpretive value
- o condition
- o cost to maintain/operate the property
- o existing or potential re-use

5.1 Planning Considerations

This section describes those formal considerations which need to be taken into account in the preparation of historic preservation plan recommendations for World War II Department of Defense sites in Alaska. Formal considerations include regulatory or statutory obligations and requirements, other legal factors (notably property ownership), and concerns of formally constituted bodies such as local governments and planning boards. Non-formal considerations, such as concerns of general members of the public are considered with regard to the preparation of context-wide planning recommendations and/or site-specific recommendations presented in Section 5.2.

5.1.1 Land Ownership

Information on land ownership was compiled from a variety of sources. Principal sources included the DEIS prepared by the Corps of Engineers for DERA (ACOE 1979), and land status maps for the Alaska Maritime National Wildlife Refuge prepared by the Division of Realty of the US Fish and Wildlife

Service (USFWS 1985). Both of these sources deal primarily with the Aleutian Islands and Alaska Peninsula area. The latter indicate approximate locations of lands selected by Native Corporations under provisions of section 14(h)(1) of the Alaska Native Claims Settlement Act (ANCSA). Additional information on ownership was obtained from DERA inventory reports prepared by outside consultants for the ACOE in early 1986.

Ownership status figures significantly in preservation planning recommendations. In selecting specific sites for incorporation into the overall plan priority was given to sites in non-military, federal ownership. No sites in private hands where the owner has agreed to actively participate in the implementation of planning recommendations have been identified. However, should such sites be identified in the future, modification of the recommendations presented here may be appropriate. In general, other federal and state lands, since they are afforded some degree of formal protection, have been given priority for incorporation into the plan.

5.1.2 Existing Land Use Plans

In response to requests from EnviroSphere, the Alaska Department of Natural Resources provided a list of Native Regional Corporations and the Regional Environmental Officer for the Department of the Interior provided a list of local governments and regional coastal resource service area (CRSA) boards (Appendix E). All organizations on both lists were contacted and requested information on proposed development and coastal zone planning which might relate to World War II related remains within their areas of interest. Copies of responses are presented in Appendix F.

5.1.3 Regulatory Requirements and Standards

The following legislation, regulations, guidelines, and standards have been identified as having major relevance to the development and implementation of a comprehensive preservation plan for the World War II in Alaska historic context.

- o The National Historic Preservation Act (NHPA)
- o The Procedures of the Advisory Council on Historic Preservation (36 CFR 800)
- o The Archeological Resources Protection Act (ARPA)
- o Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines (FR 48:44715-44745)
- o Guidelines for Historic and Archeological Resource Management, Federal Agency Responsibilities Under Section 110 of the National Historic Preservation Act.

The above items are by no means all the applicable regulatory requirements and standards. They are those most pertinent since they apply to those properties under federal control and/or concern federal actions which might effect historically significant properties regardless of their ownership. Agency specific and relevant state and local requirements are discussed on a site specific basis in Section 5.3.

Section 110 of the National Historic Preservation Act prescribes the general and specific responsibilities of federal agencies regarding the identification, evaluation, registration, and protection of significant historic properties. Section 110 (a)(2) of NHPA specifically requires federal agencies to "exercise caution to assure that any such property that might qualify for inclusion [in the National Register of Historic Places] is not inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly." As noted in Section 4.6 of this study, the last factor is of special concern for properties associated with the World War II in Alaska context. The requirements of Section 110 of NHPA are the primary impetus for the development of the preservation planning recommendations presented here.

Section 106 of NHPA required federal agencies having direct or indirect jurisdiction over a proposed federally funded, licensed, or assisted undertaking to take into account the effect of the undertaking on any property included in or eligible for the National Register. As part of this consideration, federal agencies must provide the Advisory Council on Historic Preservation with a reasonable opportunity to comment on the undertaking. The Council's procedures are specified in 36 CFR 800.

Part 800.8 provides for development of Programmatic Memoranda of Agreement (PMOA) which specify how an agency will comply with Section 106 of NHPA for a particular program. In 1984 a PMOA for the Defense Environmental Restoration Account project in Alaska was ratified. This study was authorized under the terms of the PMOA. Recommendations for ACOE compliance with Section 106 requirements related to DERA are presented in Section 6.0.

5.1.4 Current National Register Status

The following sites have been designated National Historic Landmarks:

- o Attu Battlefield and US Army and Navy Airfields
- o Adak Army Base and Adak Naval Operating Base
- o Japanese Occupation Site, Kiska
- o Dutch Harbor Naval Operating Base and Fort Mears
- o Ladd Field, Fort Wainwright
- o Kodiak Naval Operating Base and Forts Greely and Abercrombie

As of August 1986, the following site had been nominated for NHL designation, and final disposition of its status is pending:

- o Sitka Naval Operating Base and US Army Coastal Defense Sites, Sitka

In addition to all of the above sites which received (or are being considered for) NHL designation because of their association with the World War II in the Pacific theme, the Skagway Historic District and White Pass, located at the head of Taiya Inlet on Lynn Canal, was designated as a NHL on October 15, 1966. The relationship between the existing NHL boundary and the potentially significant World War II associated properties at Skagway is not known.

Regulations relating to the National Historic Landmark Program are found in 36 CFR 65. Section 65.6 of those regulations provide for monitoring by the National Park Service of NHLs. The purpose of the monitoring is "to determine whether landmarks have retained their integrity, to advise the owners concerning accepted preservation standards and techniques, and to update administrative records on the properties." When damages or threats to an NHL site are anticipated or become known, Section 8 of the National Park System General Authorities Act, 1970, as amended (90 Stat. 1940, 16 USC 1a-5) mandates that the Secretary of the Interior be advised.

Section 65.9 of the NHL regulations state that designation "does not require that a property be preserved, but in accordance with the spirit of the Historic Sites Act and the 1966 Preservation Act it ensures that a property must be deliberately considered in federal agency planning and encourages private and public preservation commitments." However, the guidelines for NHPA Section 110 implementation take a stronger position by stating that "In order to meet the requirement in Section 110(f) of the Act, federal agencies should take the approach that the importance of National Historic Landmarks, and hence their preservation, may in some instances transcend agency operational and/or project objectives" (FR 51:8250).

5.2 Historic Preservation Planning for World War II Department of Defense Sites in Alaska

"The purpose of establishing preservation goals is to set forth a 'best case' version of how properties in the historic context should be identified, evaluated and registered and treated. Preservation goals should be oriented toward the greatest possible protection of properties in the historic context and should be based on the principal that properties should be preserved in place if possible, through affirmative treatments like rehabilitation, stabilization or restoration" (48FR44720). Goals for the World War II in Alaska context include:

1. Satisfy the information needs identified in the following sections.
2. Ensure that an adequate sample of sites, properties, and property-types typifying the various themes identified in Section 4.2 is preserved.
3. Registration of sites identified as potential components of the preservation plan, ideally through preparation of a thematic resource nomination to the National Register of Historic Places.
4. Determine what land uses are compatible and incompatible, under what conditions, with each identified site and/or property and/or property-type.
5. Develop an appropriate interpretive program which will communicate to the general public the significance of the historic context(s) its various themes and the component sites representing those themes.

6. Maximize to the extent possible measures designed to protect the integrity of sites which are key components of the preservation plan.
7. Maximize coordination between the federal, state, local and private entities which manage or own properties included in the preservation plan.
8. Secure adequate public and private support (monetary as well as non-monetary) for implementation of preservation plan components.

The first three goals are generally recognized as appropriate for historic preservation planning. The fourth goal, while generally understood to be necessary, is not often specifically articulated. It is, however, of special importance and applicability for the World War II in Alaska historic context.

Because of the huge distances, extreme climatic conditions, and general logistical problems unique to Alaska, costs associated with management planning implementation are particularly high. Although individuals recognize the significance of World War II, many, if not most, Alaskans do not realize the importance of the war in their own recent history. This is partially true because the bulk of the present non-native population consists of individuals who are, or who are descended from, post-war immigrants. In addition, abandoned military installations do not fit within the "historic site" paradigm of most Americans. These same individuals, however, readily recognize the historicity of Revolutionary or Civil War sites and fortifications. Generation of non-public monies and support for allocations of public funds are dependent upon the generation of awareness and maintenance of interest in and concern for the sites and properties which are associated with the historic context. That interest and concern can best be established through a public interpretation program. Such a program is particularly appropriate here and believed to have a high likelihood of success because: a) the context has a statewide applicability, b) it can be integrated into tourism related activities. (Tourism is a major economic segment in Alaska. In the summer of 1985 several tours were specifically organized by travel agencies around the World War II in Alaska theme), and c) the high degree to which personal involvement with the events associated with the context is likely (approximately one-half million military personnel served in Alaska during the war).

5.2.1 Sites and Property-Types Recommended for Inclusion in the Preservation Plan

A total of 190 sites (including 57 sites exclusively associated with the ATG) of potential significance as part of the World War II in Alaska historic context were identified in section 4.3. In determining which should be included in a preservation plan for the context a number of factors were considered:

1. Theoretically, an argument could be made for the case that almost all sites identified in Section 4.3 are significant at at least the local level of significance since they may

represent a community's involvement in the war. As noted in Section 4.1, this argument is weak because many sites, particularly small, isolated, communications-related sites, had little effect on either the course of the war in Alaska or their associated communities. In addition, many are not associated with a local community or population.

2. Some sites which may be significant because they are clearly representative of, and directly associated with, a particular subtheme, may not warrant consideration in a preservation plan (other than to explain why they do not) because the attributes and qualities through which they derive their significance are better represented at other sites. This is particularly important when dealing with properties less than 50 years of age since in "justifying" exceptional importance, it is necessary to identify other properties in the geographical context that portray the same values or associations and determine which properties best illustrate or represent the historical themes in question" (NPS 1982:65).
3. Preservation plan recommendations for this report are highly dependent upon the quantity of site specific data about present conditions and the degree of its reliability. As the ACOE has noted in regard to World War II remains: "there is so much conjecture as to what really is there, that it is virtually impossible to separate truth from myth without actually going to each site" (1977:77). In preparing site specific preservation planning recommendations, EnviroSphere has attempted to utilize the best and/or most current available data about current conditions, recognizing these may need to be revised if and when the site-specific data becomes available.
4. Data regarding ownership and title to individual sites and portions of sites is in many cases uncertain or unknown. This is particularly so where lands selected by Native Corporations under the Alaska Native Claims Settlement Act are involved. This directly effects planning recommendations since site-specification recommendations are related to ownership, particularly public vs. private status.
5. Preservation management plans need to address the interests and concerns of a variety of sometimes adverse constituencies, including property owners and managers, others affected by implementation of planning recommendations, and the general public.

Specific criteria employed in selecting the sites recommended for tentative inclusion in the preservation plan were:

1. Relative importance of the site as determined by the number of themes and/or property types represented. (All sites at which twelve or more property types may be present have been included).

2. Sites which included property types represented at three or fewer locations have been included to ensure a certain degree of redundancy. This redundancy is essential for several reasons. In many instances the integrity of physical remains at sites is unknown. In addition, sites in non-federal ownership cannot be protected to the same degree as sites under government control. Such sites may be subjected to actions which could result in the loss of their historic integrity at some point in the future, and the loss of a unique example of a property type.
3. Does the site have special (unique) characteristics which give it significance in terms of National Register criteria other than association "with events that have made a significant contribution to the broad patterns of our history." For example, components of some sites have been identified as possibly being significant because of their associations with important persons or because they are significant on the basis of architectural or engineering grounds.
4. Sites currently designated as a National Historic Landmark or being considered for such designation have been included.
5. Is the site located in a part of Alaska containing relatively few properties associated with the context. Several sites have been included in the plan to maximize to the extent possible geographic distribution.

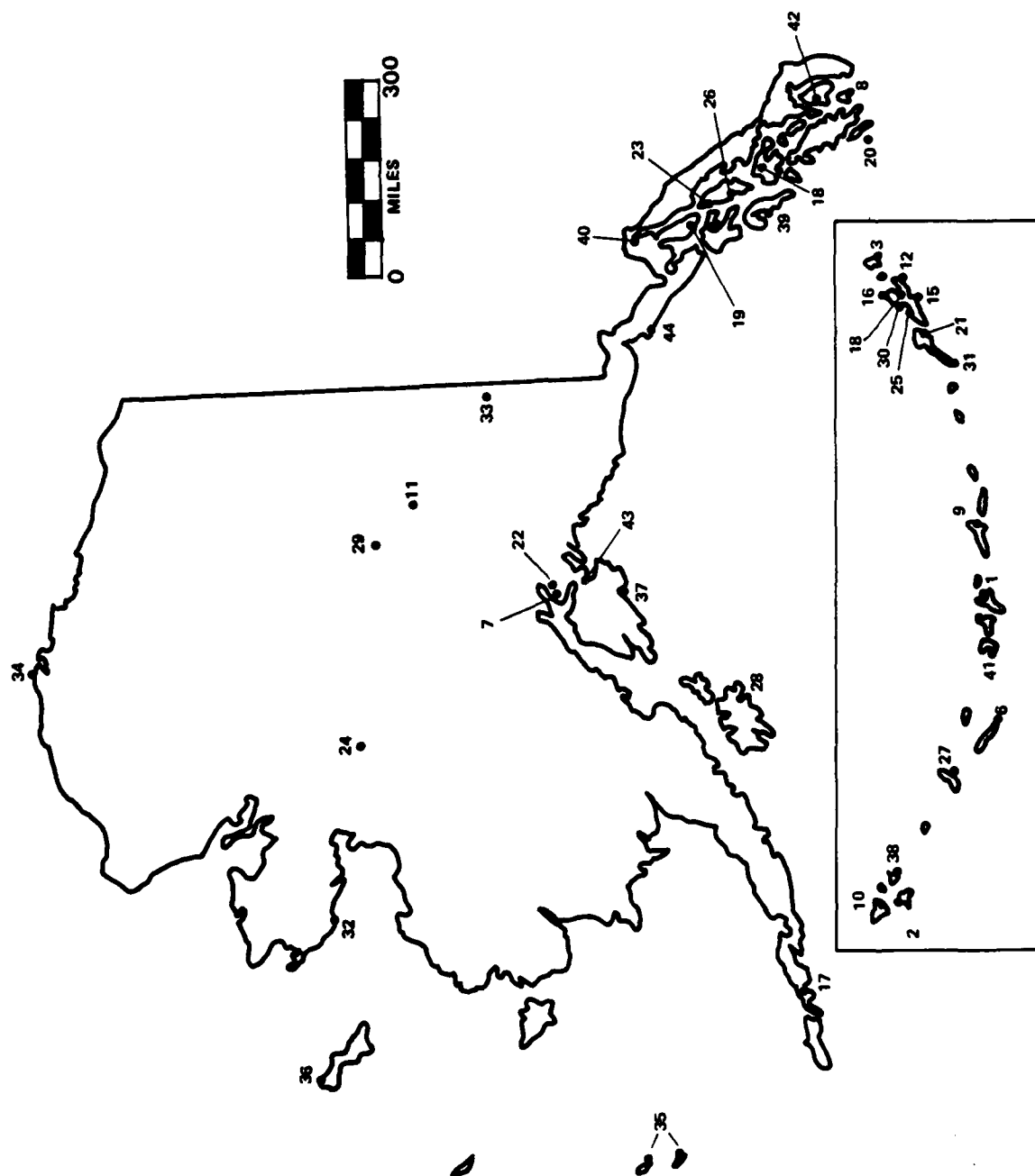
Utilizing the above criteria a total of 44 sites (Table 5-1) have been tentatively identified for inclusion in the preservation plan. The inclusion criterion (criteria) which applied for each site is described along with site specific recommendations in Section 5.3. Locations of these sites are shown on Figure 5-1. To reiterate the point made above, the identification and evaluation of sites and specific structures, features and characteristics was affected by the database. While every attempt was made to explore all avenues in obtaining pertinent information, the quality and quantity of information regarding specific details is highly variable, especially as regards ultimate wartime disposition (many projects planned in 1941-1943 were quietly altered or dropped altogether in 1944-1945) and current condition. In the absence of field inspection, many leaps of faith regarding what the records say should there as opposed to what actually was/is there had to be made. While it is unlikely that significant sites have been omitted, it is unlikely that all specific potentially significant remains have been flagged at those sites noted. It is well to remember the word of A.R. Cahn, the officer responsible for the compilation of the Dutch Harbor War Diary: "... every effort has been made to present factual information, and only factual.... Facts dates and figures are all as officially submitted, and are as correct and trustworthy as the people who submitted them" (Cahn 1946:3).

Table 5-1. Sites Recommended for Inclusion in a Preservation Management Plan for the World War II in Alaska Historic Context

1. Adak Island	23. Funter Bay
2. Agattu Island	24. Galena
3. Akutan Island	25. Kashega
4. ATG Sites	26. Killisnoo
5. Alaska Highway	27. Kiska/Little Kiska Islands
6. Amchitka Island	28. Kodiak Island
7. Anchorage	29. Ladd Field
8. Annette Island	30. Makushin
9. Atka Island	31. Nikolski
10. Attu Island	32. Nome
11. Big Delta	33. Northway
12. Biorka	34. Point Barrow
13. Burnett Inlet	35. Pribilof Islands
14. CANOL Project	36. St. Lawrence Island
15. Cape Prominence	37. Seward
16. Cape Wislow	38. Shemya Island
17. Cold Bay	39. Sitka
18. Dutch Harbor/Unalaska	40. Skagway
19. Excursion Inlet	41. Tanaga Island
20. Forrester Island	42. Ward Lake
21. Fort Glenn/Chernofski	43. Whittier
22. Fort Richardson/Elmendorf Field	44. Yakutat

Figure 5-1

LOCATIONS OF SITES RECOMMENDED FOR INCLUSION IN A PRESERVATION PLAN FOR THE WORLD WAR II IN ALASKA HISTORIC CONTEXT



LEGEND	
1 -	ADAK
2 -	AGATTU
3 -	AKUTAN
4 -	ATG SITES (Not Shown)
5 -	ALCAN HIGHWAY (Not Shown)
6 -	AMCHITKA
7 -	ANCHORAGE
8 -	ANNETTE ISLAND
9 -	ATKA
10 -	ATTU
11 -	BIG DELTA
12 -	BIORKA
13 -	BURNETT INLET
14 -	CANOL PROJECT (Not Shown)
15 -	CAPE PROMINENCE
16 -	CAPE WISLOW
17 -	COLD BAY
18 -	DUTCH HARBOR/UNALASKA
19 -	EXCURSION INLET
20 -	FORRESTER ISLAND
21 -	FORT GLENN/CHERNOMOSKI
22 -	FORT RICHARDSON/ELMENDORF FIELD
23 -	FUNTER BAY
24 -	GALENA
25 -	KASHEGA
26 -	KILLSNOO
27 -	KISKA/LITTLE KISKA
28 -	KODIAK
29 -	LADD FIELD
30 -	MAKUSHIN
31 -	NIKOLSKI
32 -	NOME
33 -	NORTHWAY
34 -	POINT BARROW
35 -	PRILOLOF ISLANDS
36 -	ST. LAWRENCE
37 -	SEWARD
38 -	SEMYA
39 -	SITKA
40 -	SKAGWAY
41 -	TANAGA
42 -	WARD LAKE
43 -	WHITTIER
44 -	YAKUTAT

5.2.2 Preservation Plan Recommendations (Non-Site-Specific)

This section presents recommendations that relate to the World War II in Alaska context as a whole. They are intended to address plan-wide requirements necessary to meet overall goals. In general, each can be associated with the processes of identification, evaluation, registration, documentation, and treatment as defined and described in the Secretary of the Interior's Standards and Guidelines. Site specific recommendations are presented in Section 5.3.

1. Archives and institutions identified in Appendix B as being likely to contain materials relating to the World War II in Alaska historic context should have their relevant holdings inventoried.
2. Copies of selected primary source materials identified in the project data base (volume 2) should be obtained and copies deposited at one or more Alaska repositories. Initially, emphasis should be on materials dealing with the site identified as potential components of the preservation plan. Ideally, copies of the primary material should be placed on deposit at the State Historic Preservation Office (Anchorage) the Alaska Historical Library (Juneau), the University of Alaska-Fairbanks, and the Alaska Air Command Office of History. The latter institution is included because it already has a substantial collection of materials relating to the context.
3. Reconnaissance level surveys should be undertaken at each of the sites identified for potential inclusion in the preservation plan. The scope of these surveys will vary at each site. In some cases (e.g., Dutch Harbor/Unalaska, Cold Bay) adequate data may be available as a result of ACOE DERA activities. When this is so, surveys should concentrate on photo documentation of extant remains (if such has not already been done for the DERA project). For all other sites, surveys should concentrate on gathering all information necessary for an evaluation of the physical integrity of the property types associated with the significant aspects of the site.
4. An oral history program should be established. Such a program is perceived as being of major importance and one which should receive a high priority. A vast body of information about both day-to-day activities and special events at military installations, and the war in general in Alaska, cannot be obtained through documentary research alone. Individuals who served in the Alaska theater during the war should be interviewed on-site for purposes of both stimulating recollections and identifying potentially significant area (i.e., trash disposal areas) which might not be marked or identified as original construction drawings.

5. A series of permanent exhibits dealing with Alaska in World War II should be established. When feasible these should be incorporated into existing public facilities such as museums. Locations tentatively identified for such facilities include: Anchorage, Fairbanks, Juneau, and Dutch Harbor.
6. The NPS and the SHPO should consult with the State Education Department regarding public school curriculum modification to give greater attention to the relationship between Alaska and World War II.
7. Instructional materials for both elementary and secondary school use should be identified or commissioned if they do not exist. Special attention should be given to the evaluation for possible classroom use of the documentary film produced by Aurora Films for the Alaska Historical Commission.
8. Portable displays relating to the Alaska in World War II context should be prepared. Such exhibits can be used as temporary exhibits at schools, libraries, airports, and public buildings.
9. State and federal land managers (in particular, unit managers) with oversight responsibility for lands on which context-related sites are located should be advised of the contents of this presentation plan and the recommendations relating to the sites under their jurisdiction.
10. Sites included in the preservation plan which are under military jurisdiction present a special case. NPS and SHPO should assist installation commanders in establishment of an education program for installation personnel which includes training military police and other security personnel in the need to enforce the laws mandating the protection of historic and archeological properties, and advising all personnel of the Department of Defense's historic preservation responsibilities and the need to report the discovery of archeological finds.
11. A thematic nomination for the National Register of Historic Places for sites included in the preservation plan should be prepared given the fact that multiple property owners, are involved. The preparation of the nomination should be coordinated by the SHPO. Federal agencies with management responsibilities for properties included in the nomination should be asked to financially support the registration as part of their NHPA Section 110 responsibilities.
12. Copies of this document should be deposited at all of the institution identified in item 2 (above) and at the following locations: National Technical Information Service (NTIS), Smithsonian Institution, University of Alaska (Anchorage), Corps of Engineers Historical Office (Washington, D.C.), USFWS (Anchorage), and the public libraries serving the areas which include the sites identified for inclusion in the preservation plan. In addition, copies should be provided to the individual land managers with responsibility for parcels which contain preservation plan components.

13. All non-archeological recording operations recommended in the site specific plans which follow should be done in accordance with the Secretary of the Interior's Guidelines for Architectural and Engineering Documentation (FR 48:44731-44734). Except where a component structure or object at a site has been especially noted for its architectural or engineering significance, Level III Historic American Buildings Survey/Historic American Engineering Record Survey (HABS/HAER) documentation should be considered adequate. When feasible, this should be supplemented by Level II documentation when existing drawings are available. Structures and objects of architectural and/or engineering significance should be documented at Level I standards. Photographic documentation should include, in addition to individual structures and objects, overall site photographs. These latter should include oblique aerial photographs when possible. In addition to the black and white photographs specified for HABS/HAER recording, color photographs should be taken. (The former will in some instances be better suited for interpretive displays.)
14. Where site-specific management plans call for the erection of markers or monuments at sites, site owners should be encouraged by NPS and SHPO to solicit financial support from local chapters of the American Legion, Veterans of Foreign Wars, and local civic groups for the funding of markers.

5.2.3 Preservation Planning Priorities

Two overlapping sets of priorities need to be considered in implementing the recommendations contained in this plan - those relating to the generic recommendations presented in the preceding section and those relating to specific sites and presented in Section 5.3. The former can be prioritized as follows:

1. Those which are time-sensitive. In other words, those relating to data which may be lost or sites which may deteriorate if action is not taken in a timely manner (recommendations 3 and 4).
2. Those whose implementation will contribute to the active physical presentation of the resources (recommendations 9, 10, and 11).
3. All remaining recommendations.

The following classification system has been used in assigning priorities for implementation of the site specific plans in Section 5.3.

1. Sites designated as National Historic Landmarks or nominated for NHL status (Adak, Attu, Kiska, Dutch Harbor, Kodiak, Ladd Field, Sitka).
2. Non-NHL sites which contained a variety of property types associated with the context and which are likely to have extant remains still possessing a substantial degree of integrity (Amchitka, Annette Island, Atka, Fort Glenn/Chernofski, Nome, Seward, Shemya, Yakutat).

3. Sites other than those listed in I or II which: a) contain unique property types (Point Barrow, Whittier, ALCAN, CANOL); b) are especially suited for interpretive centers because of their accessibility, tourist visitation rate, and/or proximity to population centers (Fort Richardson/Elmendorf Field, Cold Bay, Anchorage, Skagway, Big Delta, Pribilof Islands); and c) are examples of property types not represented at other sites, e.g., one or more examples from each of the following groups: ATG sites, Aleut removal sites (Biorka, Akutan, Makushin, Kashega, Nikolski), Aleut relocation sites (Burnett Inlet, Funter Bay, Ward Lake, Killisnoo), observation posts (Agattu), Aircraft Warning System (AWS) sites (Cape Prominence, Cape Wislow, Forrester Island) and emergency landing fields (Tanaga).
4. Sites which are included in the preservation plan to provide redundancy of property types (Excursion Inlet, Galena, Northway, St. Lawrence).

5.3 Preservation Plan Recommendations (Site Specific)

5.3.1 Adak

Background. Following the occupation of Attu and Kiska by the Japanese in June, 1942, the Alaska Defense Command ordered a reconnaissance of the central Aleutians to ascertain if and where the Japanese had established a presence and to identify locations suitable for the expansion of operational bases to counter enemy moves. Colonel B.B. Talley made two reconnaissance flights in June and October, 1942, recommending Tanaga as the optimal site for construction of an airfield (Bush 1944:426). Generals Buckner and DeWitt recommended that a base be built on Tanaga, and the plan was approved by the War Department. However, the Navy, based on surveys conducted in 1935, objected because Tanaga had poor anchorages and shoals which posed navigational hazards and suggested Adak as an alternative. The Army argued that an airfield could be more quickly constructed on Tanaga and that it would be a more effective site, being much closer to the Japanese. Admiral Theobald, backed by Admiral King, countered that such closeness would make the proposed base even more vulnerable, especially due to the anticipated problems of seaborne supply and protection, and refused to accept siting on Tanaga. The Joint Chiefs of Staff ultimately accepted the Navy's argument, and Adak was selected as the main base site, with provisions being made for an Army garrison of 5000 on Tanaga to be occupied later, essentially as a forward protective base (ONI 1945:53).

The operation, known as the "Umak Dispersal," staged from Fort Glenn and Kodiak, began the occupation of Adak, code-named "Fireplace," on August 26, 1942, with the landing from submarines of a detachment of 37 Alaska Scouts under Colonel Lawrence V. Castner. A subsidiary aspect of the Japanese operation against Dutch Harbor had been to neutralize a supposed US base on Adak. Weather had prevented the Japanese assault on undefended Adak (the fleet turning back for a second day's attack on Dutch Harbor), but there were reports that Japanese patrols had visited Adak since then, and there was concern that an observation post had been established which could warn Kiska of the planned occupation of Adak, bringing a rapid counterattack against unprotected US forces. The Alaska Scouts mission was to assess enemy presence and strength and prevent a warning of the mission being transmitted. No

evidence of Japanese activity was noted, and the landing was confirmed for August 30, 1942. Led by Brigadier General Eugene M. Landrum, 4500 US troops came ashore at Kuluk Bay in a storm and began to set up facilities. Engineer troops began work on dock and airfield facilities on D+2.

The Army's initial objection to Adak was the length of time (four months) anticipated for the construction of an operational airfield there. The siting and engineering of the airfield at Sweeper Cove, one of the most fortunate and effective military constructions in Alaska during World War II, has been credited to various individuals. A trapper named Kamsack, familiar with Adak, was present as an advisor on local topography and conditions, and an unnamed Alaska Scout is reported to have called attention to the even, tidally exposed flats at Sweeper Cove. Colonel Talley was nominally in charge, but his arrival was delayed due to weather and a stopover at Atka. Talley's Daily Log notes that he had proposed using dikes and ditches to control the tidal flow and stabilize the airfield surface at Yakutat field in 1940 (Talley n.d.). Lieutenant Colonel Carlin H. Whitesell was the Resident Engineer, but Lieutenant Colonel L. B. DeLong and Major James D. Bush are also credited with the idea of draining the tidal marsh for an airfield. At any rate, engineers diked the banks of Sweeper Creek and dammed the mouth to shut out the tide. An artificial channel was cleared to direct the waters of the creek, and the exposed tidal flat prepared as a runway. On September 10, 1942, a B-18 landed on this surface, with B-17s and P-38s landing the next day. Pierced steel planking was laid and a cross-runway constructed. The dam at the mouth of the creek had to be breached by bulldozer twice a day at low tide to allow accumulated runoff to flow out. Culverts and gates were finally installed to improve on this procedure. When there was rain at high tide, these gates had to remain closed, leading to buildup of water which inundated the field. Pumps were installed in November, 1942, and the field became permanent. The first combat mission, a bombing raid against Kiska, was flown from Adak on September 14, 1942, less than two weeks after construction began. The last combat mission was flown from Fort Glenn on September 13, 1942. With the successful occupation of Adak, the Japanese were placed on the defensive in the Northern Pacific for the remainder of the war. Only two Japanese missions (in early October, 1942) are recorded as having been flown against Adak, and the operations from Adak resulted in the decimation of Japanese aerial power in the Aleutians. While Eleventh Air Force headquarters remained at Fort Richardson, forward command headquarters advanced to Adak. Admiral Theobald's replacement, Thomas Kincaid, and General Buckner ordered both their headquarters moved out to Adak, completing the transfer in March, 1943.

Initial living conditions on Adak were abysmal. After the construction of the first dock and airfield facilities, attention was turned to improvement of other facilities. The ACOE and the Seabees worked in tandem, with the Seabees also establishing a Navy area to the north between Clam Lagoon and Andrew Lake. A Navy fueling depot was also established at Sand Bay on Great Sitkin as part of the Adak facility. The base grew until by May, 1943, Adak had almost 27,000 Army and Navy personnel and many of the comforts of a rear echelon garrison post.

With the decision to invade Attu in May, 1943, Adak became a staging area. With the establishment of a forward air base on Amchitka in early 1943, Adak was no longer the primary combat post in the Aleutians, but it did provide logistical support. While the bulk of the invasion troops, the 7th Infantry Division from California, staged at Cold Bay, the ADC's 4th Infantry regiment

in reserve was staging at Adak, as was much of the support force. Later, Adak was not only the staging area but also a training area for the invasion of Kiska. A POW camp was also prepared, but few prisoners passed through it and none were interned for any length of time.

After the recapture of Kiska in August, 1943, the decision was made to establish a major depot at Adak capable of handling an expeditionary force of 100,000, with supply capabilities for six months operations at that level. This ambitious plan, designed to provide a staging area for a northern invasion of Japan, was immediately cut in half. Contracts were let to civilian firms (Guy F. Atkinson, West Construction Company, Puget Sound Bridge and Dredging Company, and Birch and Sons) and construction began with a completion date set for April, 1944.

In fall, 1942, Adak was the subject of a War Department film, Report From the Aleutians. The film, produced by Signal Corps Colonel Daryl F. Zanuck and directed by Lieutenant John Huston, was the first in an Army propaganda series designed for civilian consumption. It was filmed shortly after the occupation of Adak, and showed camp life and the bombing of Kiska.

On August 3, 1944, President Franklin D. Roosevelt visited Adak, lunching in one of the transit sheds. Supposedly, Roosevelt's dog, Fala, was inadvertently left behind, and a destroyer was dispatched to return the dog to Seattle.

In December, 1943, all air facilities east of Adak (except Fort Richardson and Ladd Field) were reduced to the status of airdromes. Adak, while still serving as the command post for Northern Pacific campaign, began to wind down operations. One of the few bases to be maintained after the end of World War II, it served the Air Force from 1947-1950 (which operated it as Davis AFB), although the Navy was and continues to be the primary tenant.

Adak is significant in the World War II in Alaska historic context under the Allied Military Operations theme. Its occupation represented the first offensive move in the Northern Pacific campaign and its airfields served as combat and staging areas in isolating the Japanese on Attu and Kiska, which enabled Allied forces to expel them from the Aleutians. Under the Cold Weather Adaptation/Engineering theme, the construction of the airfield at Sweeper Cove was one of the major accomplishments during the war in Alaska. The supply of the campaign in the Aleutians (a rule of thumb in the Aleutians was that it took one ton of supplies per month to support a man in military operations) orchestrated through Adak, also makes it noteworthy under the Transportation/Logistics theme.

Facilities Description. The Sweeper Cove airfield was initially 5000 ft. in length. Later a second runway was built, with both extending to 7500 ft. and being surfaced with pierced steel planking and having paved taxiways, hardstands and revetments. Eight Kodiak and two Yakutat steel hangars were built. Housing, services and utilities (including a 500 bed hospital and 100 miles of roads) were built for 34,000 personnel. A 1500 ft. breakwater, two ship docks, two lighterage docks, transit sheds, bargeways, and repair shops made it the major port in the Aleutians. There was storage for 1.5 million gallons of aviation gasoline and 2000 barrels of fuel oil. Construction was primarily of Quonset and Pacific Huts and T/O structures. The initial camp consisted almost entirely of winterized tents. The depot authorization added three-100 x 50 ft. docks, an oil dock, three-800 x 181 ft. transit sheds,

20-123 x 320 ft. and 18-20 x 100 ft. warehouses, a two story (rare in the Aleutians) port operations building (146 x 200 ft.), housing (hut type) for an additional 4500 personnel, shops and utilities. Navy facilities were added at the dispersion site, Albert Merrill Field, where an airstrip, Kodiak hangar, and housing was built.

Present Conditions. A total of 1291 hut type and 151 wooden structures have been inventoried at Adak, exclusive of slab foundations and hutment revetments (ACOE 1977:36). The old Navy area around Albert Merrill Field is the main area of abandoned remains, since the Kuluk Bay area is a modernized, active Navy facility, which has been heavily cleaned up and altered since World War II.

Other Relevant Concerns. Adak Naval Air Station, with a population of 5000, is the largest settlement in the Aleutians. It is almost exclusively military although visitation is possible and there is scheduled commercial airline service. Extensive new construction using modular housing has resulted in major alterations of the World War II era configuration. Even the runways have been relocated and/or altered. Seven prehistoric archeological sites are reported in the military area, and virtually all have been damaged by military construction and activity (McCartney 1972; Stein 1977). Adak is USFWS refuge land, with the affected area being withdrawn for military use. Adak is also the Aleutian Unit USFWS headquarters. Much of Adak's mission has to deal with national security surveillance. Adak is a National Historic Landmark, and a small museum is located on-site.

Management Recommendations.

1. The most significant feature from World War II on Adak is the site of the airfield at Sweeper Cove. Nothing remains of the original field due to subsequent construction. The site should be commemorated with an interpretive marker and/or display.
2. In the absence of original remains at Sweeper Cove, a segment of the extant Navy Air Station (Albert Merrill Field) should be preserved to illustrate the original condition and construction using pierced steel planking on Adak. The subsidiary airfield facilities, such as hardstands, taxiways and hangars should be recorded. Note: this area is currently restricted for security reasons.
3. The harbor command and defense area at Zeto Point includes the harbor master's facilities, remains of an SCR 582 harbor warning radar station, 155mm and 75mm Panama concrete gun mounts, and octagonal and other military facilities. These should be recorded, preserved, and marked.
4. The hospital and headquarters area should be evaluated in detail, recorded, and marked. This command facility served as advanced headquarters for the Army, Navy and Eleventh Air Force from March, 1943, when the campaign to regain Attu and Kiska began. Note: these facilities are reported to be heavily deteriorated and the area is restricted for security reasons.

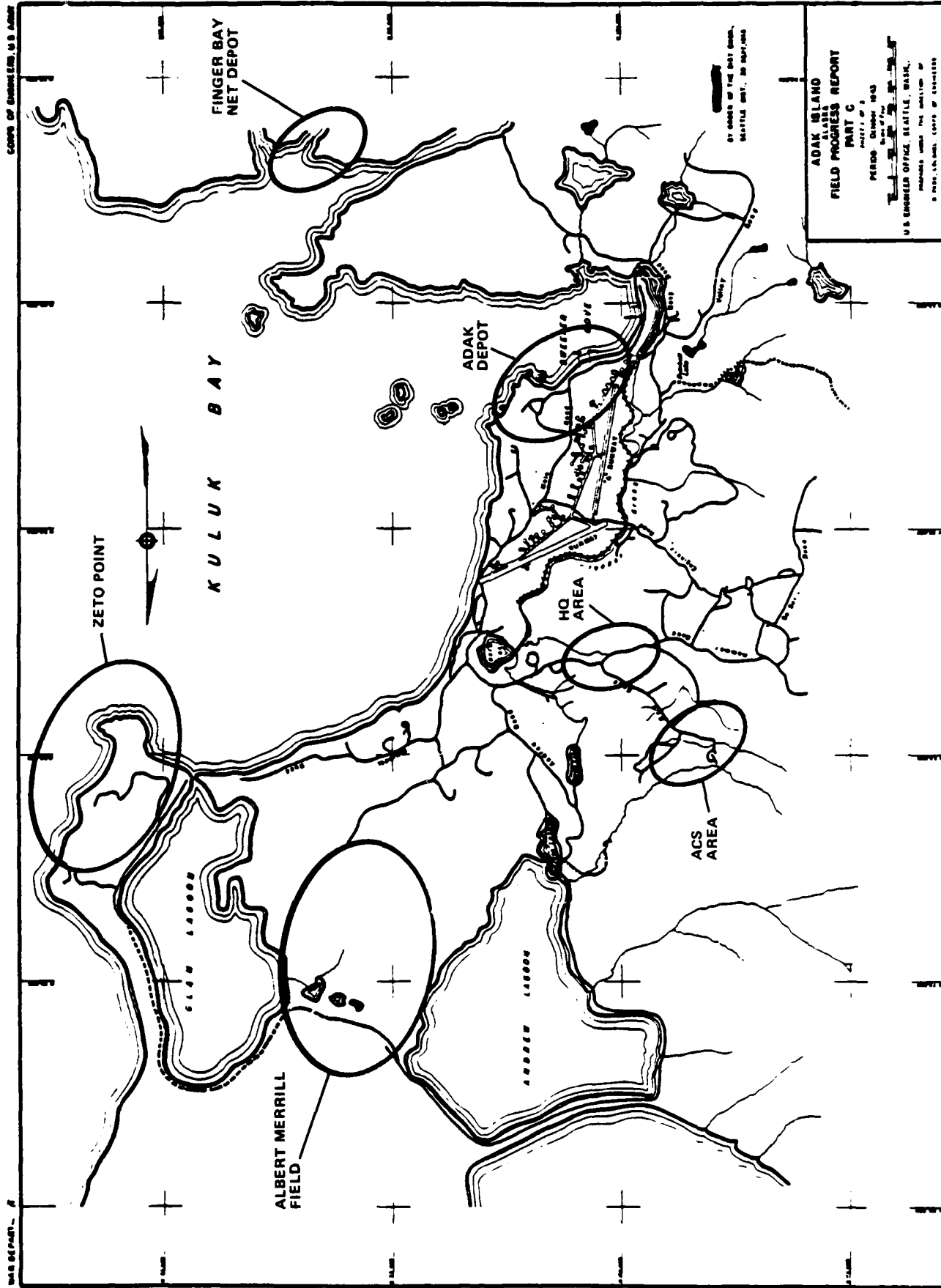


Figure 5-2. ADAK

5. In the same area lies the ACS installation. This was a major communications mode in the Aleutians. It also contained recreational facilities including a Quonset hut enlisted men's day room, where Private Peter Jepson painted murals from September, 1944 to March, 1945, depicting tropical motifs. Known as "Jepson's Jungle", it was a local "tourist spot" and reflected the attitudes and homesickness of the men stationed in the Aleutians. Photographs of the murals are included in History of the ACS-Adak (1945, Figures 55-60). The remains in this area should be investigated to see if anything can be identified, and if evidence of the murals can be located, it should be preserved.
6. The Adak depot, north of Sweeper Cove, should be evaluated in detail, recorded, and marked. This facility was constructed to supply a potential northern route invasion of Japan. It was also apparently the site of President Franklin D. Roosevelt's visit in August, 1944. Attempts should be made to identify specific structures associated with the presidential visit, as they may be significant under criterion B.
7. Corporal Dashiell Hammett published the Adakian, a base newspaper, at Adak for 18 months (1944-1945). The paper represented the attitudes of troops stationed in the Aleutians and, indirectly, the fact that "subversives", such as Hammett were stationed in the Aleutians to isolate, if not actually punish, them. Investigations should be made to locate the facilities used to publish the Adakian and the remains evaluated, recorded, and marked, since they may be significant under criterion B.
8. Submarine nets, detector buoys, and mine fields were positioned around Adak, and this aspect of harbor defense should be investigated. The submarine net depot at Finger Bay exemplifies an aspect of harbor defenses emplaced during World War II, and should be preserved to elucidate this set of remains.
9. Several small archeological sites are noted around Kuluk Bay, (AD 1-7) though some (AD 2,3,4) have been damaged by World War II or more recent construction. These sites should be located, tested and a detailed evaluation made to assess the nature and extent of damage done by military construction. Under Section 110 of the National Historic Preservation Act for determining eligibility to the National Register. Physical integrity should be assessed by survey, and data gathered to establish eligibility.
10. A small museum exists on Adak consisting primarily of military artifacts picked up on the island. Since Adak is the largest settlement in the Aleutians, is relatively accessible (scheduled air service from Anchorage and Seattle) and played a significant role in World War II, this facility should be developed and expanded to include interpretive exhibits.

5.3.2 Agattu

Background. Activities on Agattu were ancillary to major operations in the western Aleutians by both the Japanese and Allied forces during World War II.

With the occupation of Attu and Kiska after the attack on Dutch Harbor in early June, 1942, the Japanese began to scout the minor islands around those two positions for potential use. As the intermittent bombing of Attu increased, the Japanese began using the bays at Agattu as dispersion anchorages for fleet vessels servicing the garrison; detachments of Army troops were put ashore, but there was apparently never any real intention to occupy the uninhabited island (Garfield 1969:356, note 2). During summer, 1942, the seaplane tender Kimikawa Maru was driven from Kiska to Agattu by air attacks. US pilots found the new location and the tender subsequently took up an ocean station near Kiska until its complement of aircraft was destroyed and it retired to the home islands (Garfield 1969:139-140). In early July, 1942, the Japanese consolidated their forces on Kiska, which included the withdrawal of troops from a tent camp on Agattu (Garfield 1969:140). Apparently, the occupation of Agattu, along with that of Shemya and Amchitka, was planned by the Japanese in November, 1942 (Draft History 1944:88), but never undertaken, and plans for subsidiary Japanese bases were abandoned early in 1943 (Draft History 1944:89).

US interest in Agattu began with the assault on Attu in May, 1943. A scouting party under Lieutenant Colonel Carlin H. Whitesell was sent out concurrent with the attack to find out if the Japanese maintained a garrison there, and if the island was suitable for construction of an airfield (Bush 1944:434). With the taking of Attu with airfield sites at Alexai Point and Casco Cove and the occupation of Shemya, the need for a runway on Agattu with its adverse terrain became moot, and the project was dropped. Later, a small communications and observation outpost was established on Agattu on the south shore, but was apparently short-lived. Military and other occupation and use has not been extended to Agattu during the post-war period.

Although Agattu played a minor role in World War II operations, structural remains associated with that historic context are significant as a representative example of an observation outpost. Any remains of the Japanese outpost(s) would be of interest, as would the beached landing craft and downed PV-1 aircraft noted on the island (ACOE 1977:85, USFWS 1985).

Facilities Description. No documentation relating to facilities and operations on Agattu has been compiled to date, so that facilities can only be projected based on the ACOE (1977:43) inventory discussed below.

Present Conditions. The area defined by ACOE (1977:114) for cleanup comprises a small area on the south shore inland from Kohl Island. ACOE (1977:43) inventoried six Quonset/Pacific type huts, three wood-frame structures, 250 POL drums, a communications tower, one truck and miscellaneous debris. Also mentioned are a beached landing craft (type unspecified) at Karab Cove to the west of the cleanup area and a PV-1 Ventura aircraft inland from the south shore (USFW 1985). USFWS reports that the main camp area is in an advanced state of decay with no standing structures. The PV-1 (S/N 5355) was lost on September 5, 1946. The aircraft type was important in Aleutian World War II operations (patrol and bombing support in the Kuriles operation), though this example was not lost as a direct result of World War II activity. Only five examples of the Ventura are known to exist in museums with this example reported to be in generally good condition.

Management Recommendations.

1. A detailed inventory of structures and facilities at Agattu and their current state should be undertaken if data collected by the ACOE in connection with DERA is not adequate or suitable for preservation planning needs. The NPS and SHPO should immediately consult with the ACOE to ensure that the level of effort in the final design analysis funded by ACOE is consistent with preservation planning needs. This action is necessary to identify and provide an adequate data base for evaluating remains.
2. Attempts should be made using archeological techniques to locate any evidence of Japanese tent camp occupation and establish, if possible, the location of dumps and privies.
3. Specific equipment remains - the reported truck, landing craft and PV-1 - should be evaluated in accordance with recommendations contained in Appendices C and D.

5.3.3 Akutan

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At that time the evacuation of all civilian personnel, especially native, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

In early July, 1942, the 41 residents of Akutan, the site of the Norwegian-run American Pacific Whaling Company since c. 1912, were rounded up and placed aboard the S.S. Columbia along with Aleuts and BIA personnel from Nikolski, Kashega, Makushin and Biorka villages. These people were landed at Wrangell Institute in southeast Alaska on July 13, 1942, and transferred to an abandoned CCC camp at Ward Lake, near Ketchikan on July 17, 1942. The Akutan residents eventually joined the Unalaska evacuees at Burnett Inlet, though Ward Lake was occupied by refugees until August, 1944, when it was turned over to the Army which in turn briefly used it as a camp before returning it to National Forest Service jurisdiction in October, 1944.

In July, 1942, emergency supplies were cached at Akutan for military use. At about the same time a virtually intact A6M Reisen which had been shot down during the attack on Dutch Harbor was discovered; this aircraft was recovered and shipped to San Diego NAS for evaluation, the first such aircraft available for study. USFWS (1985) reports the fragmentary remains of a second Japanese Zero exist near Akutan Village, presumably dating to the same attack.

During summer, 1942, the volume of Soviet Lend Lease shipping running through Unimak Pass increased, with Soviet vessels putting in at Dutch Harbor for emergency repairs, refueling and resupply. The facilities at Dutch Harbor could not handle this burden along with their own increasing military duties, and it was decided to establish a separate facility at Akutan. Existing facilities were stocked in fall, 1942, with Seabees arriving in January, 1943, to repair and expand facilities. A small detachment was maintained to operate

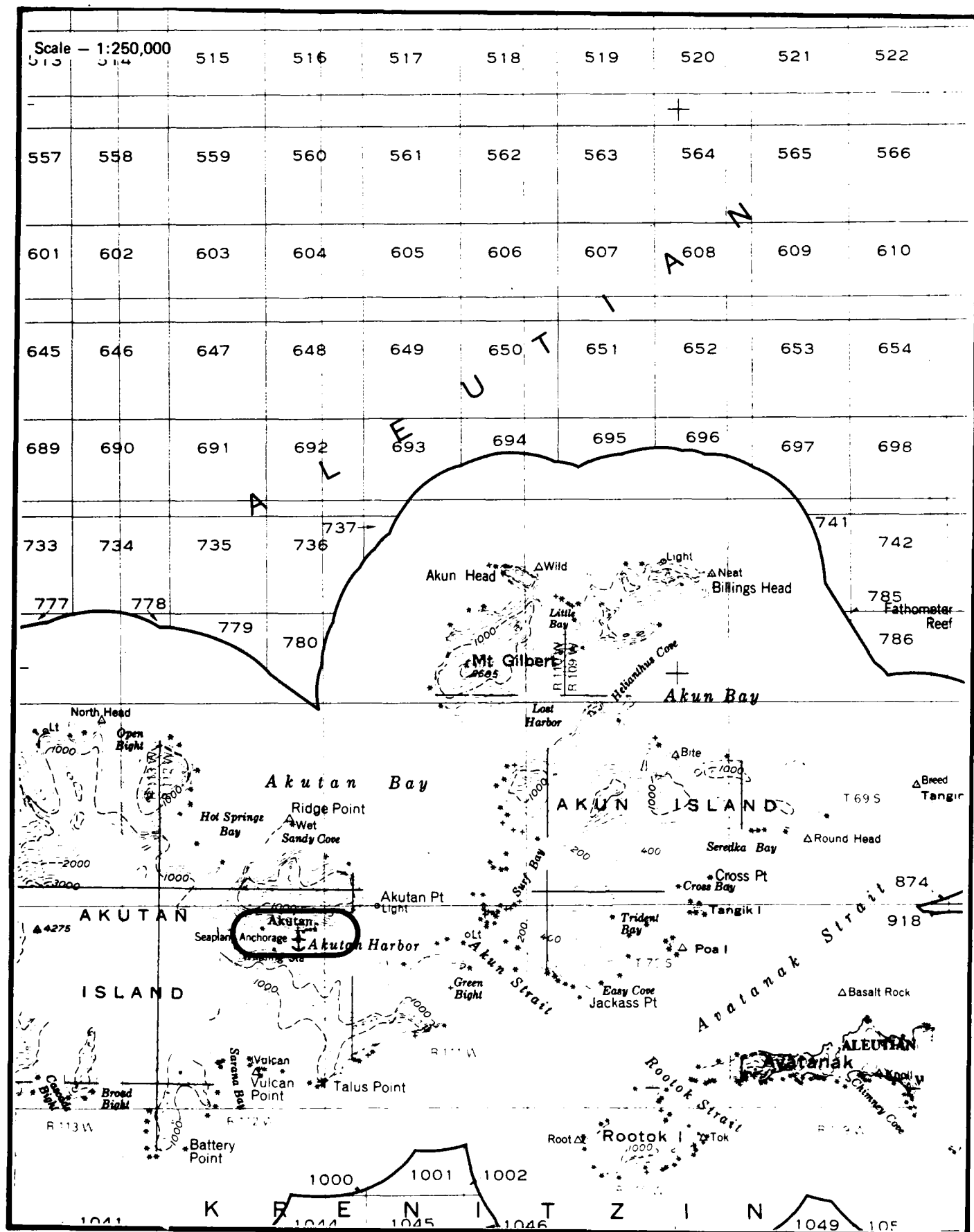


Figure 5-4. AKUTAN

the facility. Communications and navigation equipment was also maintained on site, which this was decommissioned in April, 1945, though the Russians apparently continued to put in at Akutan.

The Aleuts returned to Akutan in late May, 1945, to find that their property had been looted and vandalized. Navy reports had earlier pointed out damage and pilferage occurring shortly after the evacuation in 1942. In 1946, the Navy denied responsibility, arguing that Aleut property had been in poor condition and had been looted by the Aleuts themselves in a panic prior to evacuation, and/or suffered from exposure to the elements. The American Pacific Whaling Company filed a claim for loss of property as well. It was finally adjudged that Soviet ships had carted off as much equipment as possible after the post was closed. Ultimately about 70 Aleuts were resettled on Akutan. It is currently a functioning community.

The removal site at Akutan is significant within the World War II in Alaska historic content, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel except BIA and USFWS personnel, serving the Aleuts, were not removed, while natives and persons with at least one-eighth native blood other than those employed by the military were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from that which they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect, and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by US executive order as potential enemies at about the same time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuations at Nunivak, St. Lawrence and other areas were cancelled.

The site is also significant as one of the few locations in Alaska involved in Lend Lease shipping. It served as a major supply route and as a post for the collection of intelligence from Soviet shipmasters. US aid, much of it provided via the Alaska route, was critical in enabling the USSR to remain in the war, ultimately contributing to the defeat of the Axis powers. Akutan exemplifies the nature of Allied cooperation during World War II.

Facilities Description. The military facility was located at the site of the American Pacific Whaling Company at the head of Akutan Bay, one and a half miles from Akutan Village. Seaplane mooring buoys, living quarters, shop, warehouse, water supply and dock facilities were refurbished and/or emplaced. Two houses were used as officers' quarters, with four structures being converted to barracks. Four cabanas were joined to form a movie theater, pool room and library. There were six-5600-barrel oil-tanks, with diesel being stored in 22 whale-oil tanks (1895 barrel total capacity) and a wooden tank (470 barrel capacity). A coal yard with a 10-foot retaining wall and a 5000 ton capacity was built. A Bucyrus-Erie steam shovel, two dump trucks and a conveyor belt were used to load coal. There were three cold storage boxes and a dispensary. The dock was 290 ft. long. Surface water, fuel and utility lines were also laid.

Present Conditions. No detailed information is available concerning the current status of facilities at Akutan.

Other Relevant Concerns. McCartney (1972) notes that five to seven prehistoric and historic archeological sites have been reported on Akutan, including one at the head of Akutan Bay. Akutan currently has a population of about 70, and is unincorporated. The Akutan Village Corporation has had all the surrounding land conveyed (surface and subsurface) to it, and plans in turn to reconvey title of specific parcels to traditional occupants. Akutan is one of the communities specifically listed in H.R. 442 and H.R. 2415 dealing with Aleut restitution.

Management Recommendations.

1. Akutan is included because it represents one of eight Aleut removal sites under the Native/Civilian Affairs theme and one of only three sites involved in Lend Lease shipping. Investigations should be made to ascertain if any physical remains suitable for interpretive purposes remain on Akutan. If no suitable remains are found, Akutan should be eliminated from the preservation plan. If such remains are discovered, they should be documented and evaluated. The pier at the refueling port (whaling station) should be the focus of the Lend Lease investigation as exemplifying the site's World War II role.
2. Since the lands in question have been conveyed to the Akutan Village Corporation, that body should review all specific recommendations.

5.3.4 Alaska Territorial Guard (ATG) Sites

Background. Alaska Territorial Governor Ernest Gruening had begun lobbying for the establishment of an Alaska National Guard unit shortly after his appointment. One unit, the 297th Infantry, was organized in the southeast in mid-1940. It was Federalized in September, 1941, and most members were assigned to service outside the territory, leaving no local units available for auxiliary defense. In January, 1942, ADC commander Buckner consulted with Governor Gruening on organizing a territorial guard. While both men were in favor of such a force each had a different concept of the role of a guard organization. With the mediation of General DeWitt, it was decided that the Alaska Territorial Guard (ATG) would be used for auxiliary "home (civil) defense," while the regular Army would have the responsibility for traditional strategic defense of transportation and communication nodes, utilities, military objectives, etc.

Gruening began organizing the ATG units in summer, 1942, at which time he met Major Marvin "Muktuk" Marston, Buckner's Special Services officer. The flamboyant Marston had been independently organizing a group of irregulars called the Eskimo Scouts. Marston was put in charge of ATG recruitment in western and northern Alaska, with Gruening's military attache, Captain Carl Scheibner taking charge of the south and east. Eventually some 20,000 ATG

irregulars were enrolled in 95 units territory-wide. The focus of activity was the Seward Peninsula, where Marston set the predominantly native ATG units to drilling, marking trails and setting up and stocking some 65 shelter cabins. In return for surplus 1917 Enfield rifles and ammunition (used largely for subsistence hunting), the ATG personnel patrolled their areas, recovering Japanese balloon bombs, gathering intelligence, helping downed fliers, and fighting fires. Some supplies and a few kashim-armories were also supplied. While Marston, the self-promoter, garnered most of the publicity, the nuts-and-bolts work and recordkeeping was done by Otto Geist, an archeologist who had worked in the Bering Strait area and who served as Nome ATG Quartermaster.

The ATG never quite measured up to General Buckner's expectations, and he resisted regularizing its status. Buckner's replacement, Lieutenant General Delos Emmons, however, approved military training in 1944-1945. Geist also noted that in 1945-1946, surplus Yakutat and Pacific Huts were shipped to ATG units in western Alaska for use as armories and community centers.

In 1946, the Army questioned the usefulness of the ATG, and voted to disband it. Marston resigned as a dramatic gesture, arguing that the military organization of the native irregulars had led to their recognition of the political implications of organization, and that established interests ("exploiters - traders, local shippers, liquor dealers") were standing in the way of progress. The post-war service commanders in Alaska lobbied for continuation and overcame Pentagon opposition. In March, 1947, the Alaska National Guard was officially authorized. Marston made a triumphant return from retirement to serve as Chief Advisor.

The Alaska Territorial Guard unit sites are significant in the World War II in Alaska historic context. While the importance to Allied Military Operation was minimal, the importance in the Native/Civilian Affairs theme is major since service in the ATG served to bring marginal, isolated natives into an organized mainstream resulting in assimilation which in many respects surpassed the influence of the market economy which many had been flirting with prior to the war.

Facilities Description. No detailed information is available concerning the facilities at specific ATG sites. The only material component associated with the ATG consisted of the kashim-armories. Some were apparently traditional log or salvage constructions erected by members, while others were surplus military structures (Quonset, Yakutat or KD huts).

Present Conditions. No specific information is available on the current status of remains dating to the World War II period at ATG sites.

Other Relevant Concerns. A reported 95 ATG units were active in Alaska. A variety of local conditions are encompassed in this range.

Management Recommendations.

1. Only 76 of a reported 95 ATG sites have been identified to date. Further documentary research should be undertaken to: a) identify other ATG unit sites, and b) identify ATG sites with physical remains dating to the World War II era. Documents relating to the latter concern have only been sampled to date.

2. Using the information compiled in Recommendation 1, a sample of sites with physical remains should be investigated to ascertain if such remains are extant and to assess their integrity. Pertinent structures in extant settlements should be marked.

5.3.5 Alaska Highway

Background. A variety of overland routes from Canada to Alaska had been considered over the years, but until World War II broke out in the Pacific, the strategic value of such an overland route was not considered sufficient to justify the cost. In early 1941, the Northwest Staging route, a chain of air facilities servicing air transport from the US to Alaska (Great Falls, MT; Edmonton, AL; Grand Prairie, AL; Fort Nelson, BC; Watson Lake, YT; Whitehorse, YT; Ladd Field, AK), was pioneered following an established commercial route. Following the attack on Pearl Harbor, the US and Canada approved an Alaska-Canadian road - the Alaska or Military Highway, popularly known as the ALCAN - and by February, 1942, had approved a route which would roughly parallel the Northwest Staging route. In spring, 1942, US engineer troops began working on three segments of the route simultaneously. One contingent, based at Big Delta on the Richardson Highway in Alaska was to build east to the international border. Another contingent was to use Whitehorse as a base (supplied from Skagway via the White Pass and Yukon Railroad), building east and west. A third group would start at Dawson Creek, the extant railhead, and work west. The initial route was to be a pioneer trail, suitable for basic military transport and to be constructed as quickly as possible, with upgrading to be made by civilian agencies later. The US agreed to provide labor, equipment, design, and funding while the Canadians agreed to waive permit considerations and red tape. The Canadians were to assume ownership of segments in their territory after the war.

The total personnel at work on the route in 1942 reached 11,000 troops (seven regiments, three of which were segregated black labor units). There were few maps available, and the haste required by the schedule and a lack of expertise and time led to difficulties in road siting and construction. Still, the pioneer road was completed in one season (eight months) in October, 1942. The first convoy using the route went through to Fairbanks in November, 1942. A total of 133 bridges and over 8000 culverts (many of wood stave pipe and/or log cribwork) were built.

Engineering troops were withdrawn early in 1943, and improvement work turned over to a series of 70 civilian contract firms supervised by the US Public Roads Administration. The ALCAN was to be a year-round road, with standard widths (26-32 ft.). Grades were to be reduced, roadbeds prepared, drainage runoff dealt with and the route rationalized. A total of 16,000 personnel were utilized. Maintenance was a nightmare, as were communications. The ACS was assigned to install a telephone landline in what was to be a minor construction miracle.

By the end of 1943, the war in the Aleutians was essentially over, and the road work became less critical. By 1944, reconstruction work had ceased and maintenance was under a cadre of 300-500 Canadian civilians hired by the US Army. The road turned out not to be significant in terms of supply. Alaska was most efficiently supplied by ship and secondarily by air, with overland transport except for rail transport playing a minor role.

The ALCAN was turned over to Canada in April, 1946. It was kept on a military access footing through 1947 and opened briefly in 1948 until the volume of breakdowns caused the authorities to close it. It was first opened for general traffic in 1949. The last vestige of military control ended in 1964, when the road was turned over to the Department of Transportation.

The ALCAN Highway is significant within the World War II in Alaska historic context within the Transportation/Logistics and Cold Weather Adaptation/Engineering themes. The 1422 mile road, while not significantly contributing to the ultimate victory in the defense of Alaska, was important in the subsequent development of Alaska and the Canadian Northwest. It represents an attempt to provide transportation options which would probably not have been built without the threat of war. It was a major engineering feat, exemplifying the difficult and hazardous conditions faced by the construction troops involved.

Facilities Description. The pioneer road was little more than a track, while the developed route was 26-32 ft. wide with drainage ditches, wood culverts and wood and steel bridges. A series of temporary camps were also constructed to service the builders, as were small military outposts.

Present Conditions. The entire ALCAN Highway has been reconstructed since 1946. The only feature known to exist from the original highway is a wooden bridge at Canyon Creek, milepost 996.3, in Canada.

Other Relevant Concerns. Fully 85% of the ALCAN route lies in Canada. The US segment (approximately 225 mi.) has been essentially reconstructed so that no features of the original road are known to exist.

Management Recommendations.

1. A detailed examination of documents related to the construction of the ALCAN Highway should be made to identify abandoned segments of the original right-of-way or original features on the highway. The assumption has been made that subsequent reconstruction has obliterated original construction features and that only the route itself remains as significant. This should be confirmed through the above-mentioned documentary research and field checks of appropriate segments. Any such features should be recorded for construction technique.
2. Associated features such as construction equipment and construction camps should be identified, documented and evaluated in connection with the abovementioned study.
3. The identified documentary sources in Canadian archives should be investigated.

5.3.6 Amchitka

Background. "The purpose of the Amchitka project was to provide a main advance base for long-range bombing missions against the Japanese Archipelago and a base for offensive action against Kiska and Attu. The site was within 15 minutes fighter and bomber range of Japanese held Kiska. Amchitka afforded

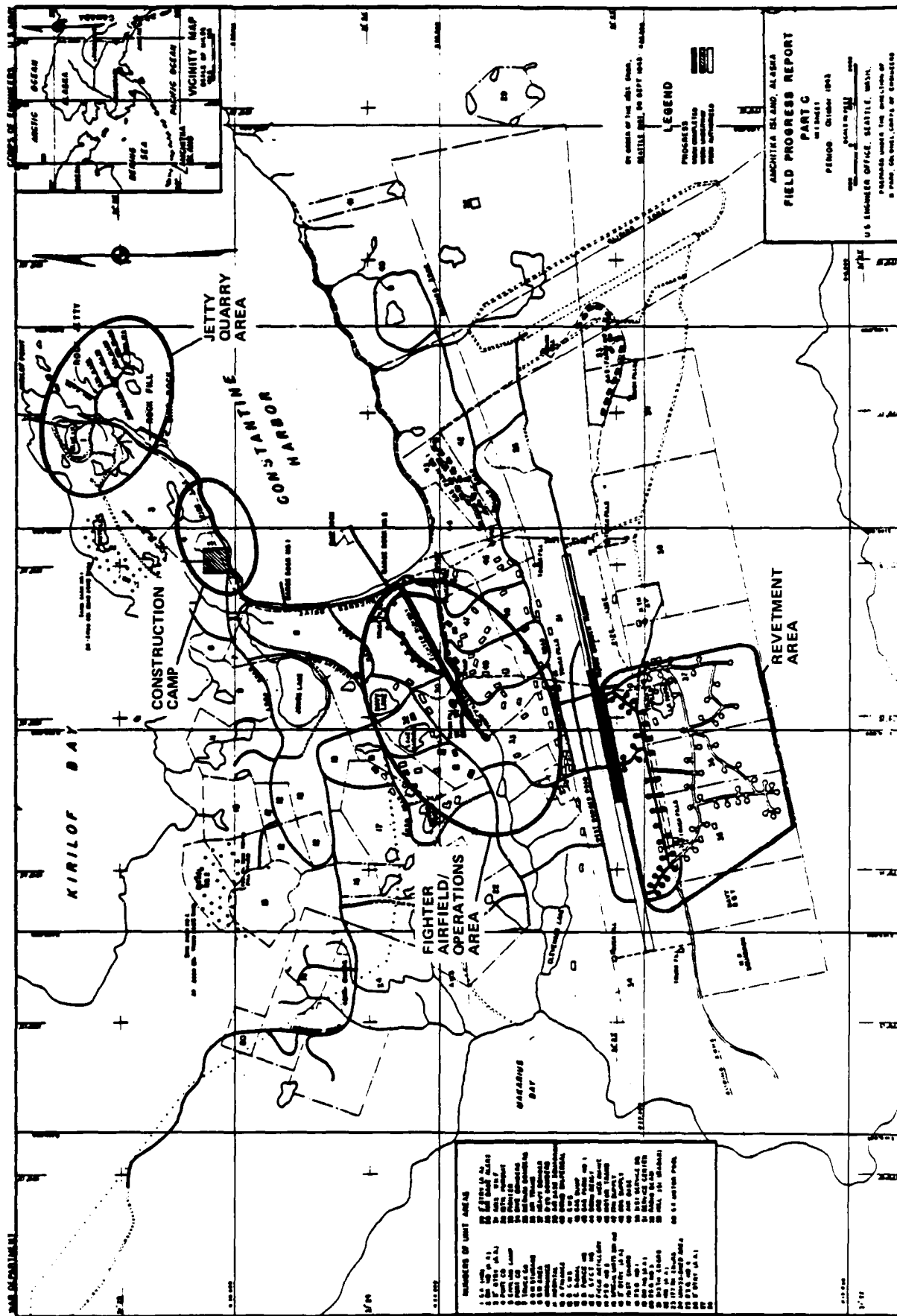


Figure 5-5. AMCHITKA

an excellent location for AWS installations from which any Japanese moves to or from their main Kiska installation could be detected.....Best harbor facilities exist in Constantine Harbor, on the east end of the island. The terrain is also relatively flat at this location, affording excellent airfield locations" (Bush 1944:193). In late October, 1942, it was feared that the Japanese occupation of Amchitka was imminent, and in December, 1942, the bombing of an abandoned Aleut village on the island was ordered to deny its use to the Japanese (Garfield 1969:175-176). A reconnaissance of the island was made by Colonel B.B. Talley, supported by an Alaska Scout detachment, in mid-December, 1942. The reconnaissance, which was nearly discovered by Japanese patrol aircraft, showed that the Japanese had been present, though none were resident, and that an airfield could be built near Constantine Harbor.

After weather delays, an assault landing was made on Amchitka, code-named "Longview," on January 12, 1943. The landing was unopposed and there were no casualties among the invasion force despite rough weather, though the destroyer Worden hit a rock and sank in Constantine Harbor with the loss of fourteen. Work began immediately on the fighter strip and lighterage docks, with troops being housed in tents. Japanese float aircraft discovered the US presence and began harassing attacks on the airfield construction troops on January 24. Six sorties were flown by A6M Rufes, with minor damage to the field and two casualties being sustained before US P-40s arrived on February 16, 1943. The next, and last, Japanese raid occurred on February 18, 1943, when the attacking aircraft were shot down. Bombers began flying six to seven daily missions from the new base against Attu and Kiska as weather permitted. On May 3, 1943, the XI Bomber Command shifted its headquarters to Amchitka in anticipation of the summer assaults on the Japanese positions. Though weather prevented the aerial forces from playing a major role in the battle for Attu and the battle for Kiska was anticlimactic, aircraft from Amchitka flew close support missions during the campaign. Paratroops were also moved to Amchitka for deployment during the Kiska assault; though they were not required, it was the only planned use of airborne troops in the Alaska Theater. After the expulsion of the Japanese from the Aleutians, Amchitka was used as a support base for the harassing raids on the Kurile Islands. It was also chosen in fall, 1943 as one of the forward bases to be developed for use by B-29s, though none were stationed there. The Air Force operated Amchitka until February, 1949, when the base was placed on caretaker status. Some salvage work was done under contract from 1956 to 1958, but the installation was not used again until a series of underground nuclear tests were conducted in 1965, 1969, and 1972. Amchitka is currently the site of a US Fish and Wildlife Service Aleutian Canada goose research program.

The military site at Amchitka is significant within the World War II in Alaska historic context because of the close air combat support role it played during the campaign to expel the Japanese occupation forces from the Aleutians in 1943. Amchitka was the site of a minor Japanese presence and was itself attacked by Japanese aircraft. It represents the only presence of airborne troops in the Aleutian campaign. As headquarters of the bomber command and as the closest base for fighter cover, its role in operations during the assaults on Attu and Kiska and afterwards against the Kuriles, which served to tie down Japanese resources in the north, as well as its preparation for B-29 basing make it significant. Subsidiary engineering significance is involved in

construction and quarrying operations during the building of the installation, as is the civilian/native theme, since harbor facility construction by the West Construction Company represented the use of civilian contract personnel in the war zone.

Facilities Descriptions. The original plans for Amchitka called for a 150 x 4000 ft. fighter airstrip, a bomber strip capable of supporting heavy bombers, lighter and ship docks, access roads, housing and utilities for a garrison of 181,000, with the fighter strip (to be built by the Army Engineers) and docks (to be built by the Navy Seabees) receiving priority. The fighter strip was built at the head of Constantine Harbor by diking and draining a marsh (Photo 5-1). Runway construction involved the stripping of two to eight feet of muskeg and fill with sand from borrow areas two miles away. Further construction was authorized to include a 200 x 10,000 ft. bomber runway with a 200 x 5000 ft. cross runway south of the fighter strip (all runways were to use pierced steel plank surfacing), Kodiak "T" hangars (at least one Birchwood hangar was constructed later to support the proposed B-29 operations), 1.5 million gallon avgas tanks, ordnance overhaul shops, two 500-bed hospitals, a 2800 ft. rock breakwater/wharf at the entrance to Constantine Harbor (Photo-5-2), 155mm Panama mount emplacements (seven were constructed), an AWS radar station (Hill 351) and housing and services for a garrison of 14,500. A road (Infantry Road) was built along the length of the entire island, and an observation post set up at Aleut Point on the western tip of the island by the Alaska Scouts to warn of attacking aircraft and generally to monitor Japanese activity.

Two borrow areas were opened for sand used in runway construction, as was a quarry at Kirilof Point for construction of the jetty. The quarry was the largest such operation in the Aleutians, with a total of 384,300 cubic yards of rock being removed by the West Construction Company, the civilian contractor, although the jetty continued to wash out due to weather. It was the largest such construction attempted in the Aleutians. Amchitka used the most heavy equipment of any site in Alaska, hauling as much as 30,000 cubic yards of fill per day during runway construction. While quarry and borrow areas are easily identified (they are still open), disposal location of muskeg stripped during construction is undetermined, as are garbage disposal areas.

Present Conditions. The ACOE (1977:116,301) defines the cleanup zone for Amchitka as the area east of a roughly NNE-SSW line from Petrel Point to the south shore (near the Infantry Road junction), which is divided into three areas. Areas 1 and 3 represent the eastern end of the island where the air and harbor facilities were located and the densest remains are found, while Area 2, roughly eight by three miles, consists largely of subsidiary remains to the northwest (although the section near Areas 1 and 3 includes Kirilof Point and the fighter strip). There is a small cleanup area at Aleut Point on the western tip of this island as well. This appears to cover virtually all World War II construction. ACOE (1977:38-39) inventoried a total of 1151 Quonset/Pacific huts, 338 wood-frame structures (ranging up to 5000 square feet), 143 revetments, 78 concrete/reinforced concrete foundation slabs, two hangars (one identified in Figure 103, p. 315, as a Birchwood hangar), five storage tanks, seven gun emplacements (360 degree Panama mounts), plus a variety of miscellaneous debris, including live ordnance. Borrow areas and the quarry site are still open. Illustrations also show pickets and barbed wire, bulldozers, warehouse, control tower, and dump areas. USFWS (1985)

Photo 5-1

Runway at Amchitka (c.1943)

Source: USAF Photographic Collection, National Air
and Space Museum, Smithsonian Institution.



Photo 5-2

Constantine Harbor, Amchitka (c.1943)

Source: USAF Photographic Collection, National Air
and Space Museum, Smithsonian Institution.

2



notes that the runways are in good condition, though not maintained since 1980. The same source also notes a considerable accumulation of dump aircraft parts in the south east area of the base which may be potentially valuable.

Other Relevant Concerns. Approximately 78 archeological sites are known on Amchitka, with about 44 apparently included in the cleanup area (ACOE 1977:176), though how many are extant is unknown. All are essentially coastal in nature. Cohen (1981:148) illustrates a wartime machine gun emplacement located in a cemetery with Russian Orthodox wooden crosses, which is attributed to Amchitka. Contract salvage carried out during the 1950s and nuclear testing from 1965-1972 may also have affected material remains at Amchitka. Other concerns are the potential presence of unstable live ordnance (Amchitka was an ordnance repair and storage facility) and the USFWS use of the island for avian research.

Management Recommendations.

1. A cultural resources survey should be undertaken for the express purpose of locating any evidence of Japanese occupation, the location of dumps and privies, and to define and identify specific activity areas and, in particular, the civilian construction camp.
2. Testing should be undertaken to assess the characteristics and extent of the aforementioned features if found to be extant.
3. Runways, and revetments exemplify the character of the site, and should be stabilized if necessary for possible use in future interpretive programs.
4. An evaluation of the existing Birchwood hangars at Amchitka by a structural engineer should be undertaken to determine if they present an immediate danger, if such an evaluation has not already been made by the ACOE as part of DERA (see Section 6). If such a study so indicates, the feasibility of stabilization should be investigated. If stabilization is not feasible, recording of the structures should be undertaken.
5. A marker should be placed in the vicinity of the fighter airstrip commemorating the historical and engineering significance of Amchitka.
6. Structures located in the area between the fighter airstrip and the main bomber airstrip should be evaluated to determine the state of structural integrity of buildings in the area for potential future use as an interpretive center (see Section 5.0). In the absence of suitable structures in that area, at least two other representative structures in good condition should be located and left intact for potential future relocation to the main area. Preference should be given to structures in close proximity to extant hangars.
7. Aircraft parts located on Amchitka in dump areas should be treated in accordance with recommendations in Appendix C.

5.3.7 Anchorage

Background. Anchorage was essentially nonexistent until the Alaska Railroad yards were built at the mouth of Ship Creek on Knik Arm in 1915. As the headquarters of the railroad, Anchorage grew to be the second largest city in Alaska, reaching a population of around 4000 in 1940. The largest population center on the south central coast of Alaska, it had a harbor which was open six months a year, rail transport from the coast and to the interior, and land suitable for a military facility. When Fort Richardson was authorized as the main base in Alaska in 1940, Anchorage was selected as the site. Fort Richardson was to serve as the headquarters of the Alaska Defense Command until 1944. Anchorage was also the site of the Army Corps of Engineers Office, important for directing so much of the construction in wartime Alaska.

During the buildup in 1940-1942, Anchorage boomed as military, outside construction personnel, and providers of goods and services flocked to the area. Housing was at a premium and there are tales of personnel being assigned to occupy offices to prevent other agencies from appropriating them. The ACS initially had a single room in the then new Federal Building. Eventually, it got the ADC to evict all non-essential/non-defense agencies from the building. The ACS also operated a subdepot, initially in an abandoned chicken coop, the only structure its officers could find to rent on short notice. The ACS finally negotiated a lease for the old Alaska Railroad headquarters office building for storage. The railroad maintained its switching and main repair facilities and yards in Anchorage.

The construction over a two year period of facilities to accomodate almost 15,000 troops, and the emigration of the thousands of civilian contractors needed to build and maintain them led to the development of Anchorage's Fourth Avenue as a Red Light and bar district of impressive proportions. The military turned to civilian contractors to provide room and board. The main construction camp, Anderson's Camp, was a headache for the authorities. There was a jurisdictional dispute as to what agency (municipal, military or contractor) should attempt to maintain law and order in the lawless camp where robbery, drinking, violence and pilferage of materials and personal effects was rampant. The Chief Engineer censured Anderson's Camp for running high-stakes gambling games and taking a cut (Talley n.d.).

The war provided a boost for Anchorage's economy, and there was little drop in population, as the city became the commercial center of Alaska after the war, displacing Fairbanks and contenders in the southeast. It has held the position ever since.

Anchorage is significant in the World War II in Alaska historic context under the Transportation/Logistics and Native/Civilian Affairs themes. It was a transport, transshipment and storage depot and the closest thing there was to an urban service center in Alaska during the war. The war created Anchorage's preeminent position as the primate center in Alaska with all of the sociological implications such status has for wartime military and civilian organization and postwar adjustment and momentum. The aspects of civilian life in a war zone - blackouts, shortages, inflation, uncertainty and economic opportunity - also involve the Native/Civilian Affairs aspect.

Facilities Description. No detailed information is available concerning Anderson's Camp, the ACS depot ("chicken coop"), the old Alaska Railroad building, or other related facilities.

Present Conditions. With the exception of the Federal Building, there is no detailed information available regarding structures and areas of Anchorage with remains dating to World War II.

Other Relevant Concerns. The Good Friday earthquake in 1964 heavily damaged the older section of downtown Anchorage, resulting in subsidence of up to 20 ft., and destroying much of what remained of World War II and earlier vintage Anchorage. Pre- and post-1964 developments have altered the character of Anchorage, if anything, more than natural disaster as relates to older sites. Virtually all of the affected area is in private hands with the exception of the Federal Building and Alaska Railroad facilities.

Management Recommendations.

1. Additional documentary research should be conducted to identify and ascertain the current status of extant World War II era structures such as Alaska Railroad facilities, ACS headquarters and depot, the ACOE office and Anderson's Camp. The Alaska Railroad, the ACS and the ACOE were headquartered in Anchorage and both played a significant role in World War II. Anderson's Camp was both unique and representative of the role of migrant construction workers and the facilities needed to house them during the buildup. Documentation on Anchorage is slim, and more should be developed, particularly, through oral history.
2. Such extant remains should be evaluated for integrity and if appropriate, sites should be marked.

5.3.8 Annette Island

Background. Annette Island is part of the Metlakatla Indian Reserve, established in 1891. The community of Metlakatla was founded at the north end of the island. In 1940, Annette was selected as the site for a CAA airfield, with construction beginning in August of that year, even though the Metlakatla tribe did not grant formal lease approval until January, 1941. This delay was partially due to negotiations over preference for jobs for tribal members. The initial construction was accomplished by ACOE construction troops, CCC workers from the West Coast and civilian contract personnel. There was considerable friction between the local Indians, who had received little preference, and troop strength was reduced by the diversion of ACOE personnel to Yakutat in October, 1940, but the main difficulty was inexperience with high-latitude construction on a deep muskeg base. Muskeg had to be stripped to depths of between 18 and 25 ft. and crushed rock fill added to provide a stable footing for runways and heavy structures such as hangers, tanks and power plants. Facilities were planned for a complement of 3700 troops, including road and harbor link facilities, and forward operating air base facilities to defend the West Coast of the US and Canada in case of attack.

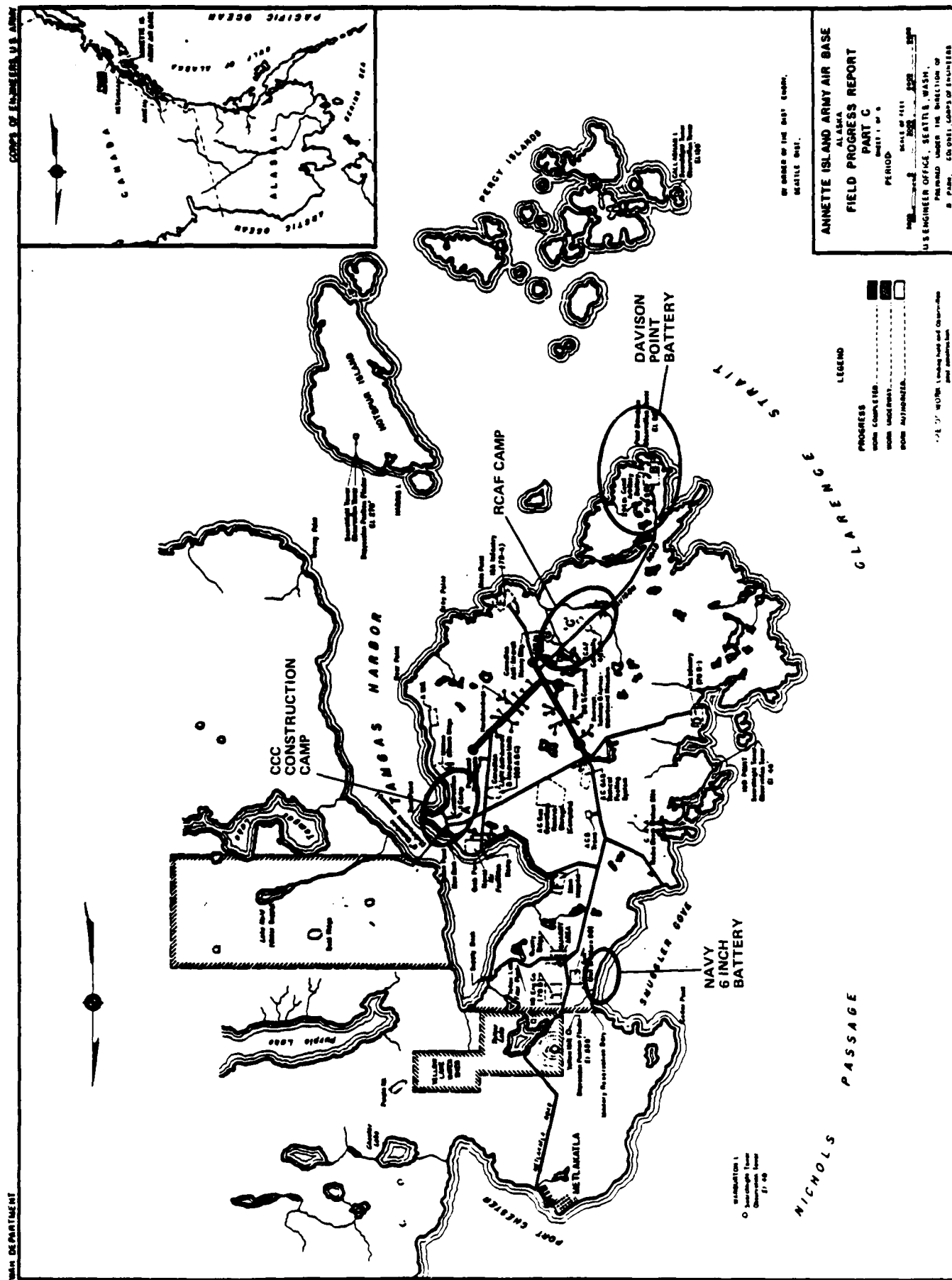


Figure 5-6. ANNETTE ISLAND

The basic facilities at Annette were ready to receive aircraft and garrison personnel in late spring, 1942, with the Royal Canadian Air Force providing both. The Number 115 Bomber Reconnaissance Squadron with 14 medium Bolingbromes arrived at Annette in early May. A US customs official there insisted that the Canadians pay duty on arms and equipment, almost nipping US-Canadian cooperation in the bud, though the customs issue was quickly resolved. Two fighter squadrons equipped with P-40s followed. Almost from its inception as an operating base, Annette was bypassed by the war which stayed far to the west, never approaching the mainland. Its operation was largely delegated to the RCAF, though even the majority of Canadian Squadrons were advanced to Kodiak and later Fort Glenn and Adak. Bolingbromes and P-40s remained on reserve duty at Annette until August, 1943. They were briefly replaced by units flying Hawker Hurricanes and PV-1 Venturas, but the Canadian units were gone by the end of 1943. Annette, along with all Army Air Force installations east of Adak (except Elmendorf and Ladd Field), was downgraded to airdrome status in December, 1943, and had no aircraft and only a caretaker force assigned afterwards. Final construction had not been completed at Annette until May, 1943, much of the May, 1942 to May, 1943 construction having to do with building for the RCAF, which used Annette as a training facility. No US aircraft were ever stationed at the base. The US Navy had maintained an air facility and minor presence at the site from September, 1942 until June, 1944. The military retained the use of the facility until 1949, when certain parts were turned over to the CAA and the remainder was returned to the Metlakatla.

Annette Island is significant within the World War II in Alaska historic context. Within the Allied Military Operations theme, it is one of the key sites demonstrating US-Canadian cooperation. While the US built the facilities, they were used and modified by the RCAF. Though never used in a combat role, Annette was important as one of the earliest-built facilities in Alaska. From the Cold Weather Adaptation/Engineering aspect, techniques developed at Annette, while not radically different from established practice, were important in providing construction experience for other airfield construction in Alaska. Under the Native/Civilian Affairs theme, the facility was built on Indian land and relations with the Metlakatla was a focus of its development. Construction was primarily accomplished with civilian labor, involving negotiation of work rules and accommodation to wartime needs.

Facilities Description. Two runways 5000 x 200 ft. (asphalt surface) with aprons, taxiways, and revetments were constructed. These were subsequently enlarged to 6000 x 7500 ft. A steel Yakutat hangar (143 x 190 x 35 ft.) with concrete slab flooring and side lean-to shop facilities was also built. Dock facilities were constructed in Tamgas Harbor, as was a Navy seaplane ramp at Crab Point. Four 155 mm Panama gun mounts were built at Davison Point, on the south end of the island, with 6 inch Navy guns being emplaced at Smuggler Cove. The RCAF maintained heavy and light antiaircraft batteries near the airfield. Housing, services and utilities for 4000 personnel, 125,000 square ft. of storage, as well as cold and ordnance storage facilities were constructed.

Present Conditions. The runways and seaplane ramp facilities remain, though they are not in active use (Annette is not listed in the FAA guide for Alaska). A total of 17 Quonset Huts, 27 wood frame buildings and four slab foundations were inventoried, plus a recreation hall, chapel, school, hangar, three storage sheds, and control tower. Other buildings include an apartment

building, Elk's Club, Coast Guard Quarters, and several miscellaneous buildings. Fuel tanks, abandoned vehicles, walkways and dock facilities are also present. A wide variety of miscellaneous debris is also present. Two Panama mounts were noted at Davison Point.

Other Relevant Concerns. Annette Island was used for a variety of military - related communications uses during the late 1950s, 60s and 70s. A radar installation existed at Davison Point and a White Alice facility existed at Smuggler Cove. Other tenants using Annette facilities during that period include the CAA (FAA), US Coast Guard, DOE, State Department of Transportation and Public Facilities, Pacific Northwest Airlines and Western Airlines. The only current tenants include approximately 100 Metlakatla Indians. A motel, the Metlakatla Inn, operates on the island, which is accessible by ferry or by charter aircraft. Roads make most of the island accessible, though access depends on permission from the owners, the Metlakatla Indian Community Council. There exists the possibility that hazardous and/or toxic wastes exist in the area. No recognized prehistoric or historic archeological sites are reported in the immediate area. Heavy construction in terms of stripping, quarrying and filling during World War II and subsequent construction and use has caused extensive ground disturbance in the area (Sverdrup & Parcel and Associates, Inc.).

Management Recommendations.

1. Annette Island is significant in being one of the first military airfields in Alaska. It typifies the difficulties associated with emergency military construction in Alaska. A marker commemorating its significance in World War II should be erected.
2. The site should be investigated to ascertain if evidence of the CCC construction camp in Area A at Tent Point is extant, this area should be assessed for integrity and evaluated if appropriate.
3. The RCAF camp (Area C along Davison Road south of the runways) should be evaluated for integrity and, if appropriate, investigated, documented, and marked.
4. Material remains of the Navy 6-inch gun battery near the quarry area on Metlakatla Road on Smuggler Cove should be identified and evaluated for integrity. If appropriate, the site should be assessed, documented, and marked.
5. Material remains of the Army 155mm gun battery at Davison Point should be evaluated for integrity. If appropriate, the site should be assessed, documented, and marked.
6. Numerous abandoned vehicles are noted for Annette Island. These should be investigated to ascertain if any are of World War II vintage and evaluated for recovery for restoration or as a parts source (according to the guidelines established in Appendix D).
7. A general evaluation of Annette's facilities should be undertaken to establish integrity of remains. The MICC has stated that with the exception of some facilities in the main airfield area, it wishes to

participate in the DERA cleanup. While it appears unlikely that remains worthy of preservation are located at Annette, remains should be documented prior to demolition.

8. As the land involved is owned by the Metlakatla Indian Community Council, all specific recommendations should be reviewed with that body. If upon evaluation, significant remains are located, the MICC should be approached to ascertain if they would accede to a thematic nomination of the National Register of such remains.

5.3.9 Atka

Background. After the Japanese attack on Dutch Harbor in early June, 1942, the seaplane tender Gillis was ordered to advance to Nazan Bay on the east side of Atka to service forward PBY reconnaissance aircraft searching for the Japanese fleet. There is some indication that the Japanese battle plan may have considered Atka as a target of opportunity in the planned assault on Adak following the Dutch Harbor raid (Rohfleish 1948:467), though this was not part of the main plan and was not carried out as the Japanese bypassed the Adreanofs and occupied Attu and Kiska further out the Aleutian Chain. The Japanese were discovered at these sites by army patrol aircraft on June 10, 1942, and all available US aircraft, including the Atka-based PBYs, were ordered to bomb the Japanese out of the Aleutians in what became known as the "Kiska Blitz."

Japanese aerial patrols were also probing eastward, and a Japanese plane bombed Atka Village, which had a population of about 80 Aleuts, without effect on June 12, 1942. The PBYs at Atka had exhausted their ordnance and were considered vulnerable to enemy attack, as was the entire island. The Navy ordered the Aleuts to leave their village and go to dispersed summer camps overnight. During the night, the Navy burned Atka Village to deny it to potential invaders, leaving the Aleuts with only what they had removed for the overnight stay. All but two structures in the village, including the store, were destroyed (Morgan 1980:140,162). The following day, June 13, 1942 approximately 60 Aleuts were taken off Atka and the Gillis withdrew to Dutch Harbor. On June 15, 1942 two PBYs returned to Atka to collect an additional 20 Aleuts who had been away from the village at the time of the initial evacuation. A total of 81 Atkans were removed to Killisnoo in the Alaska Panhandle for the duration, returning in 1945 (Cuttlefish Five 1981:101).

In mid-July, 1942, Navy seaplane tenders again advanced to a station at Atka. Japanese patrol planes attacked the Kane in Nazan Bay on August 3, 1942, and an ambush was set up using newly available P-38s. On August 4, 1942 two H6K Mavis flying boats appeared over Nazan Bay. The P-38s managed to shoot down both in separate actions. This loss of aircraft represented the first operational victory for the P-38, the last Japanese attack that far east in the Aleutians, and the cause of the withdrawal of H6Ks and their seaplane tender, the Kimikawa Maru from the theater.

US Navy seaplane tenders continued to rotate at Nazan Bay. On August 29, 1942, the Casco was torpedoed by the Japanese submarine RO-61. PBYs chased the sub and disabled it, allowing the destroyer Reid to sink it. Five Japanese seamen were picked up, among the first Japanese POWs taken in the North Pacific during World War II (Mills 1938:37; Cuttlefish Five 1981:132). The Casco was repaired and continued in service.

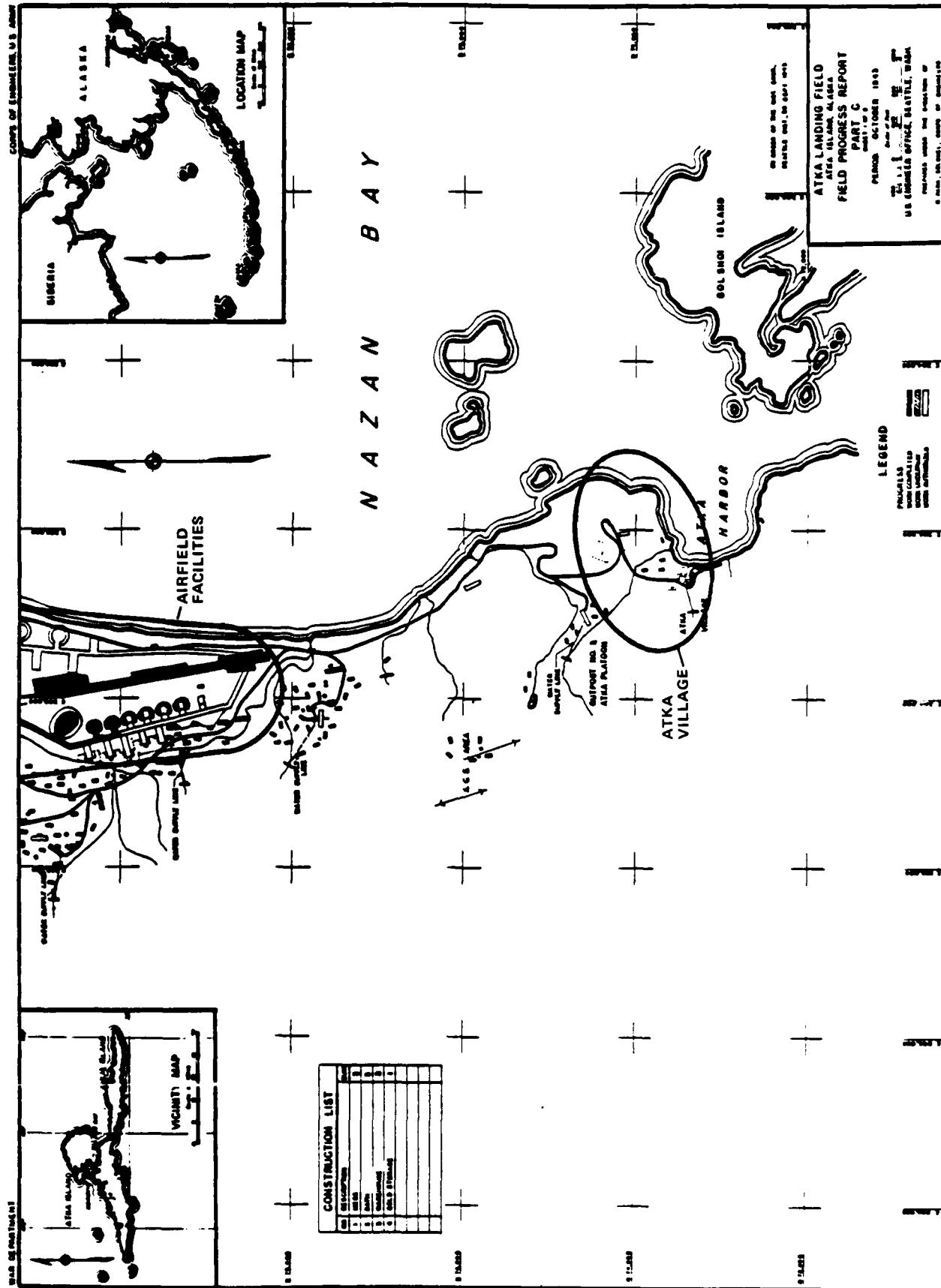


Figure 5-7a. ATKA

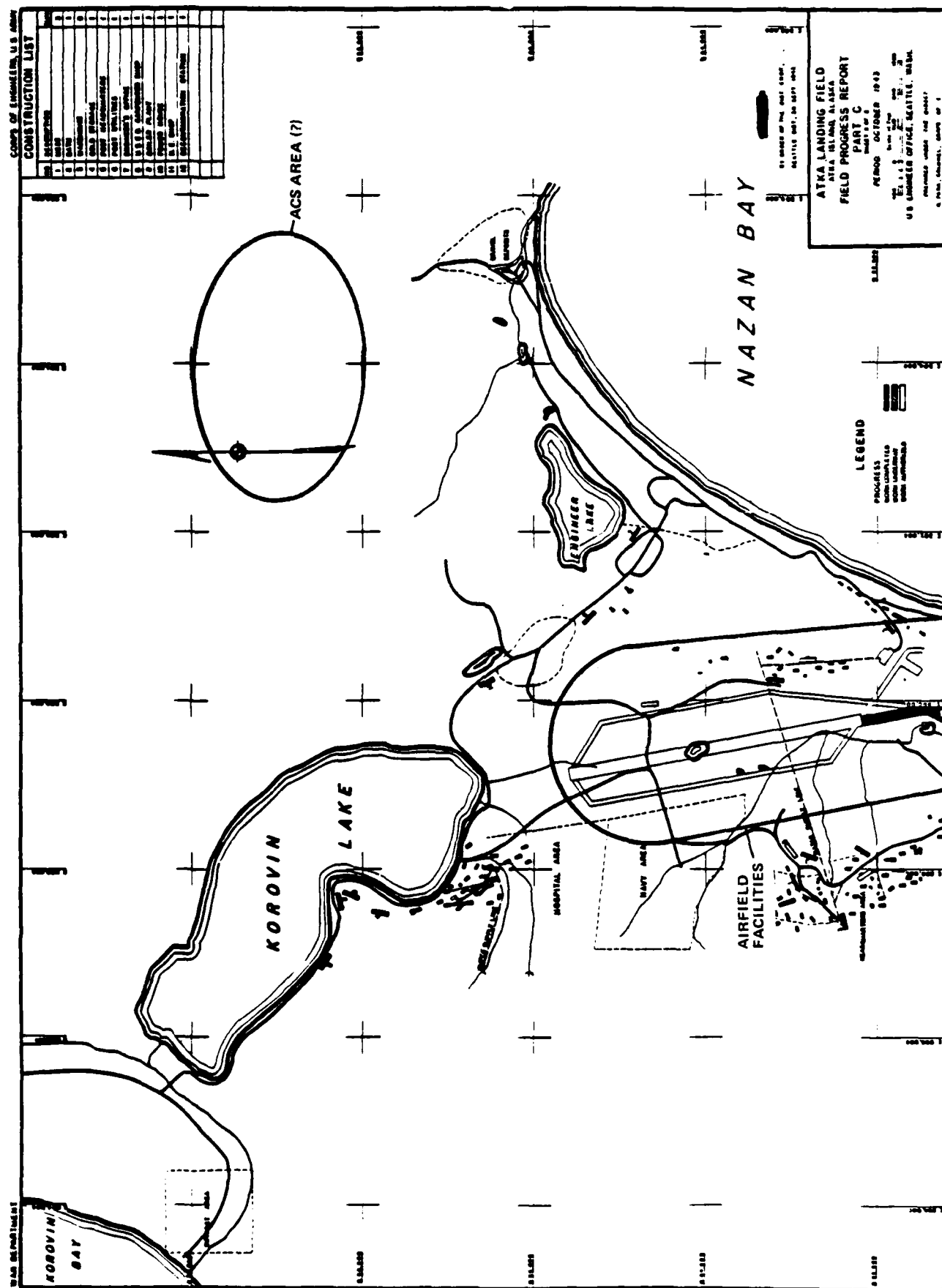


Figure 5–7b. ATKA

The US Alaska Defense Command, having had little success in dislodging the Japanese by long-range bombing, began planning to extend bases out the Aleutian Chain. By mid-August, 1942, the plan to occupy Adak was formalized, with Atka selected as a backup garrison station (Conn et. al., 1964:270). Adak was taken on August 30, 1942, and the initial landing made on Atka by 732 troops on September 16, 1942. With the Japanese strength and position in the Aleutians an unknown quantity in late summer, 1942, Atka was originally slated to serve as an operations backstop in case of enemy presence or counterattack against Adak. When enemy opposition failed to materialize and construction of base and air facilities ran ahead of schedule on Adak, Atka began to take a back seat in terms of priorities. The main base areas were just north of the native village in Nazan Bay, with an observation post on Korovin Bay across the isthmus, and an ACS station on the flank of "Bald Eagle Mountain" to the north. An airstrip was constructed with the first landing occurring in November, 1942, according to the ACS History-Atka (1945), and the strip being declared ready and handling two B-24s in December, 1942, according to Bush (1944). Atka was primarily an Army installation, though it was declared a Naval Air Facility (NAF) in November, 1942, and upgraded to a Naval Auxiliary Air Facility (NAAF) in February, 1942; as the war moved west, the NAAF was decommissioned in October, 1943, leaving only a naval weather unit, which operated until 1946, when the Navy disestablished Atka (Facilities Construction Summary 1952:34).

Atka's secondary status compounded the hardships for the personnel assigned there. The terrain was particularly difficult with a high water table which would not support heavy equipment. Almost all construction had to be done by hand (the emplacement of the ACS generator unit, two miles - uphill - from the main area, required 100 troops to pull the unit from the beach). There were no adequate dock facilities, so a barge was overturned to provide unloading facilities. The ACS personnel arrived in October, 1942, but their equipment and housing was not delivered until May, 1943. Personnel on Atka referred to it as "Atkatraz" (Helbock 1977:132-133).

In addition to its primary mission as an airfield, Atka also serviced a weather station on Seguam Island, and became a relay station on the submarine cable connection from Fort Glenn to Adak. In December, 1943, Atka was downgraded to the status of an airdrome (the Army's equivalent of the Navy emergency landing field - the Navy had decommissioned its air facility in October, 1943), though as recently as late March, 1943, an increase in runway length and facilities has been authorized (Bush 1944; Cole 1950:379). By 1944, a caretaker garrison was planned for Atka, with abandonment planned for Fall, 1945.

The Native Aleuts who survived their removal to Killisnoo (a high percentage of community elders died in the Southeast) were returned to Atka in 1945. The Navy rebuilt the village, including the church, using surplus lumber and materials. The Aleuts from Attu, who had spent the war in Japanese internment camps in Hokkaido, were denied resettlement on Attu, and were sent to Atka, the home of their traditional enemies, where no allowance had been made for their housing (Morgan 1980:162).

Facilities Description. Initially a 3000 x 100 ft. runway with pierced steel plank surface, taxiway and hardstands, a 50-bed hospital, a lighter dock, roads, housing and utilities for a 950 man garrison were planned (Bush 1944). The lighter dock was never built, but a ship dock (72 x 392 ft.) was constructed in 1943. The garrison was expanded to 1056, with the runway

extended to 4,000 ft in late March, 1943. Plans were made to extend the runway to 4,800 ft. but this was apparently never completed. The Seabees built warehousing, housing and nose hangar facilities, and the Army planned a T-hangar. The ACS subcable had a landfall at Nazan Bay, crossed the isthmus underground and was submerged at Korovin Bay. The ACS station consisted of four Quonset huts, a T/O operations building, and three other frame structures (ACS History-Atka 1945). Other documents (NARA Cartographic Branch, RG407) show roads, water supply dams, concrete bases for storage tanks, 43 Quonset/Pacific type huts, as well as a site labelled "US Cemetery" (ECO #1041-1053).

Present Conditions. The ACOE (1977:117,) defines a cleanup area for Atka which includes the Nazan Bay area from Cape Kudugnak on the northeast to Profile Point on the southeast and includes Korovin Lake in the northwest. This is further subdivided into four sub-areas (ACOE 1977:302). ACOE (1977: 34-35) inventoried at total of 98 Quonset/Pacific type huts, 11 wood-frame buildings, 66 revetments, 11 storage tanks, approximately 700 POL drums, eight channel buoys, 60 submarine net floats, one wooden hangar, one dock and miscellaneous debris including runway matting.

Other Relevant Concerns. There are 22 archeological sites known on Atka (McCartney 1972:20-21; Stein 1977:397-414; ACOE 1977:177), approximately six of which are apparently in or adjacent to the cleanup area. Stein (1977:397f) states that sites on Atka are potentially significant for the study of prehistory and adaptation of Native peoples in the Aleutians and for the study of Russian-Aleut relations, since this densely populated island was the headquarters of Russian operations in the Aleutians (Cohen 1981:118). Cohen (1981:118) also illustrates a Russian Orthodox cemetery at Atka village, associated with the church. In the early 1900s, Atka Natives, with the help of the non-Native schoolteacher, formed a cooperative to finance operations and sell furs in order to bypass the local non-Native trader (Morgan 1980:123). The community was active until its evacuation, and became active again upon the return in 1945. The village was rebuilt on the site of the pre-war village, south of the military facilities, though essentially all of the military facilities are located within two miles of the native village. A severe storm in 1977 destroyed much of Atka village, so that the majority of structures present today are recent. The Atka community has a population of about 100, and is one of the most isolated communities in the US. While residents migrate for wage labor, mainly in the fishing industry, Atka is primarily a subsistence community on the traditional pattern, one of the few which still exist (ACOE 1977:23-24). The sand-base airstrip suffered from aeolian erosion and without maintenance became unusable in the 1960s. Monthly tug service from Adak by the Navy under contract to the BIA ceased in the 1970s, with only one annual supply being currently maintained. Charter costs were \$2,500 in the late 1970s (Morgan 1980:43). A regular mail flight is maintained.

The environmental conditions which made construction and operations on Atka so difficult - rough terrain, high water tables, and deep, fragile tundra - persist. During the war, military personnel planted a few trees and equipped the "forest" with a park bench. Both the trees and the bench apparently still exist (Morgan 1980:68).

The area of the main base involves conveyed native lands (Atxam Village Corporation), while most of the remainder of the island is under the jurisdiction of the USFWS as either Aleutian Island Wilderness or National Wildlife Refuge lands.

Three downed World War II aircraft are known on Atka, though none is located within the immediate cleanup area. A B-24 is known at Cape Kigun on the western tip of Atka, and a B-24 (on the National Register) is located at Bechvin Bay, on the northwest coast. An OA-10 is known to exist on the north side of Korovin Bay, outside the cleanup area; the exact location is unknown, and therefore land ownership has not been definitively established (USFWS 1985). This last site is closest to the affected cleanup area.

Management Recommendations.

1. The events of significance occurring at Atka during World War II should be commemorated: a) the removal of the Aleuts; b) the torpedoing of the USS Casco and the sinking of the RO-61; and c) the air battle between US P-38s and Japanese H6Ks.
2. The presence of World War II era structures in Atka Village (some structures are reported to have survived the events of the evacuation) should be identified and, if extant, documented to establish the nature of native life immediately prior to World War II as part of the investigation of the Aleut removal.
3. The World War II airfield, an example of an emergency landing field, should be documented with respect to construction.
4. The ACS station north of the main garrison area should be identified and evaluated for integrity. If appropriate, it should be documented, tested and considered for preservation as an example of installation construction and garrison life in the Aleutians at isolated sites during World War II.
5. A military cemetery is mentioned for Atka. This site should be identified and commemorated.
6. Downed aircraft are noted at Cape Kigun (B-24), Bechevin Bay (B-24) and Korovin Bay (OA-10). The Cape Kigun plane is in the vicinity of a World War II era AACS station and a YH/YG radar navigation beacon and an archeological site (AT-1). The Bechevin Bay B-24 is on the National Register and is located near archeological village sites AT-2 and AT-3. Both are on USFWS administered lands. The OA-10 on the north of Korovin Bay is in the vicinity of archeological site AT-16. Its exact location is unknown, and it may be on USFWS land or land owned by the Atxam Corporation.
7. Except for the downed aircraft, all known remains are located on Atxam Corporation land. Any preservation recommendations or action should be reviewed with that body. If evaluation shows that significant remains exists, the Atxam Corporation should be approached to ascertain if they would accede to a thematic nomination to the National Register such remains.

8. Attempts should be made to locate the RO-61 only if the approximate location of the sinking can be established through archival investigations or the oral history program. If located, its exact position should be recorded. Any underwater remote sensing survey should minimally conform to the Minimal Geophysical Survey Requirements to Protect Cultural Resources (DOI 1975).

5.3.10 Attu

Background. Attu was reportedly discovered by the Russians in 1741, and became a popular stopover for Russian traders. By 1942, the once populous island was the site of a single Aleut village at Chichigof Harbor, with a population of about 40 and served by two BIA employees. Following the raid on Dutch Harbor and the defeat at the battle of Midway, the Japanese Northern Task Force siezed Attu and Kiska on June 7, 1942. A force of 1140 infantry, engineer and service troops landed on Attu, wounding one Aleut. Charles Jones, the BIA school teacher, also died under unclear circumstances (the Japanese said he committed suicide, while other evidence suggests that he was executed or shot trying to escape). Forty-three Aleuts and Charles Jones' wife, Etta, were captured, but treated relatively well, remaining on Attu for almost three months before being transferred to Kiska when the Japanese decided to evacuate Attu in August, 1942. They were subsequently sent to Japan, where they were interned as "captive guests" until the end of the war.

The discovery of the Japanese occupation of Attu and Kiska led to the political decision on the part of the War Department and President Roosevelt to make every attempt to expel the Japanese from the Aleutians. Few resources, however, could be devoted to the reduction of the garrisons. A counterattack was considered, but discarded because shipping was not available and a supply line to the islands could not be defended. The Allies attempted to bomb the Japanese out (the "Kiska Blitz"), but a lack of aircraft and the lengthy round trip run from the nearest US base on Umnak made bombing relatively ineffective. Attu was generally spared because of the distance, but in August, 1942, it was decided that a US assault was imminent and the Japanese consolidated their garrisons on Kiska, abandoning Attu. Attu was reoccupied by fresh troops in October, 1942, who began to dig in for a long stay. Meanwhile the Allies began advancing out the Aleutian Chain, establishing bases on Adak in August, 1942, and on Amchitka in January, 1943. With the establishment of Amchitka, the Japanese garrisons were within easy bombing range. The Allies already controlled the skies and after the Battle of the Komandorskis in March, 1943, gained control of the seas as well.

The Allies were planning to assault Attu and Kiska, and the US 7th Infantry Division, training in California for use in North Africa, was selected to spearhead the attack. As the time for the attack neared, it was felt that inadequate forces were available for an assault on heavily defended Kiska and it was decided to bypass Kiska and hit Attu, where intelligence suggested a skeleton force of around 500 held the island. Actually, 2400-2600 Japanese troops were present. US training and equipment were inadequate, as was intelligence and support, though three battleships and an escort aircraft carrier were assigned to the invasion force. The 7th Infantry, under Major General Albert E. Brown, staged at Cold Bay, and headed for Attu, picking up the ADC reserves from Adak on the way out. The invasion plan was not decided

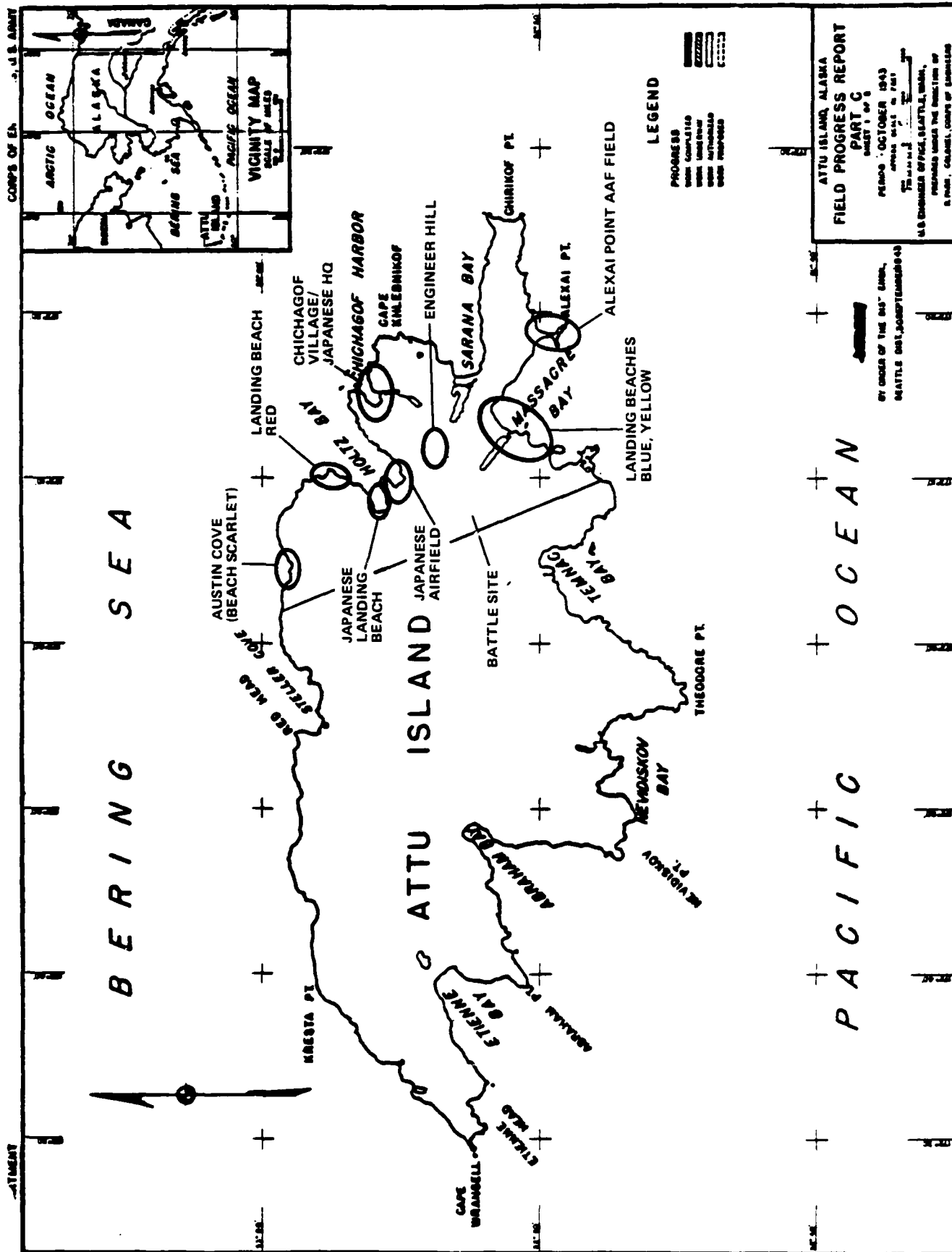


Figure 5–8a. ATTU

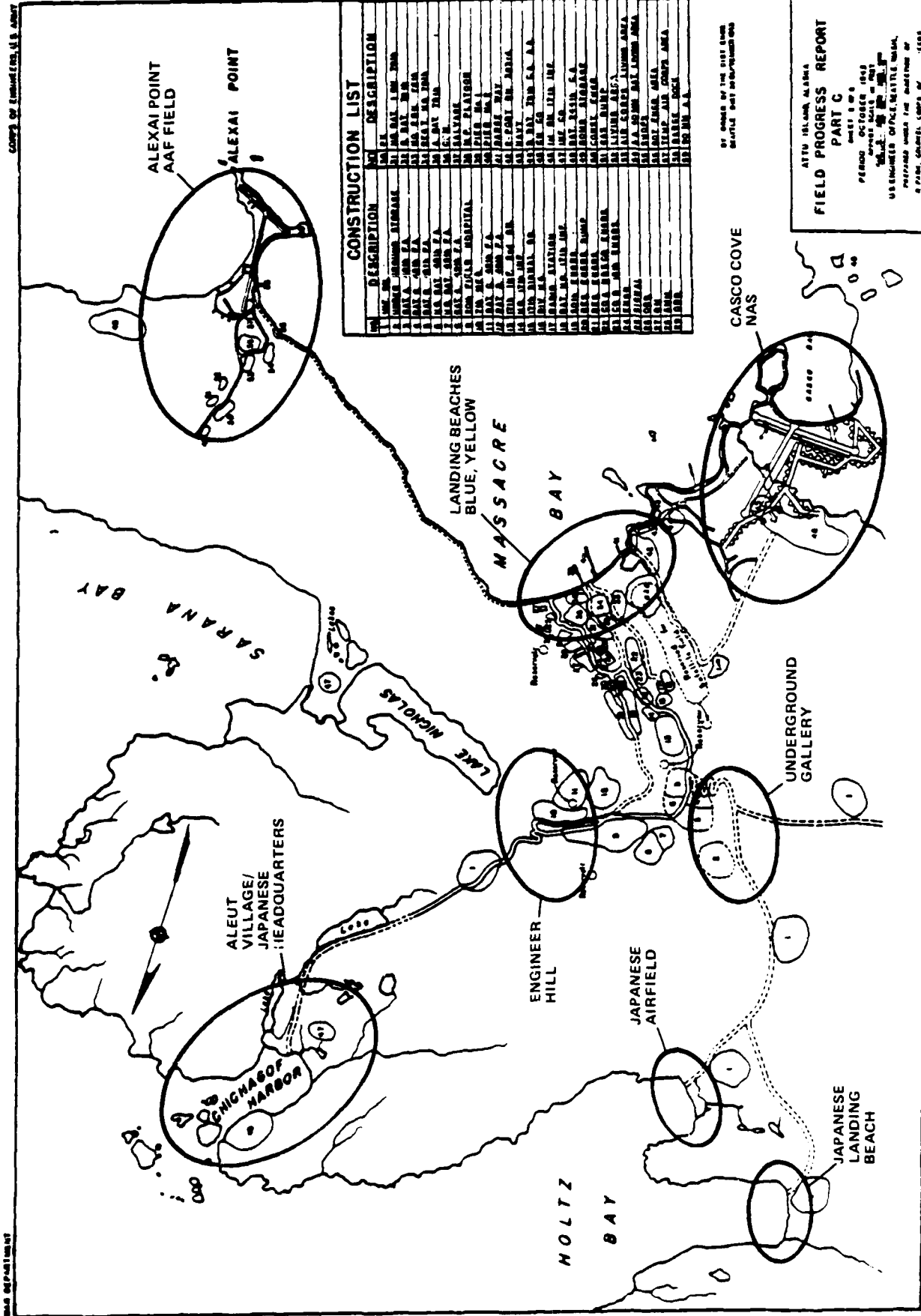


Figure 5-8b. ATTU

upon until shortly before D-Day, which was postponed due to weather until May 11, 1942. A Scout Battalion landed at Austin Cove (Beach Scarlet) and a battalion of the 17th Infantry Regiment reinforced by a battalion from the 32nd Infantry Regiment landed at the mouth of Holtz Bay (Beach Red), both on the north. Two battalions of the 17th Infantry Regiment landed at Massacre Bay (Beach Yellow) in the south. The plan was to link up the northern and southern forces and turn east to trap the Japanese at Chichagof Harbor, their headquarters.

By evening of D-Day, the invasion forces had bogged down, the victims of poor equipment, poor support, weather, terrain and a fanatic, entrenched enemy. By May 12, 1942 (D+2), it was clear that the Allied advance was stalemated. General Brown requested supplies for six months and reinforcements. Due to a misunderstanding (Brown needed troops since the enemy had been underestimated, and his request for supplies was designed to get materials into the pipeline, not to indicate he was planning to take so long), Admiral Thomas Kincaid relieved him and appointed Major General Eugene M. Landrum. Coincidentally, at about the same time the Allied advance became unstuck. After a week, the northern and southern forces linked up according to the original plan. Meanwhile, the Navy had been worried over a Japanese counterattack. Submarines were spotted, and Japanese bombers sortied from Paramushiro in the Kurile Islands, but the Battle of Attu was primarily an infantry fight. Poor weather kept the planes grounded, and while submarines were sited and the Navy shelled Attu (destroying the Japanese camp at what was left of Chichagof Village), the main work was left to the GIs. Finally by the end of May, after almost three weeks of fighting, the Japanese were essentially defeated. On the night of May 29, 1942, the remaining Japanese troops launched a suicide attack on US lines, almost breaking through save for a last ditch defense organized by the ACOE's Colonel James Bush. The remaining Japanese committed suicide. A total of 29 prisoners were taken out of a garrison of about 2500. US casualties included 550 killed, 1500 wounded and 1200 other injuries, generally trenchfoot, due to inadequate equipment and supply. Casualties were heavy, second only in terms to ratios of troops engaged (15,000) to Okinawa in the Pacific War.

As soon as the battle was over (snipers were still being cleaned out in September), ACOE and Seabee personnel began constructing airfields at Alexai Point and Casco Cove. On July 10, 1943, bombers based at Alexai Point attacked the Kurile Islands, the first raid on Japanese territory since the Doolittle raid in April, 1942. Local tactical air operations also helped lead to the Japanese decision to withdraw from Kiska. The raids on the Kuriles kept up the pressure on the Japanese, diverting Japanese forces from the central and south Pacific. Following the war, Attu was maintained as a Navy refueling base until 1952. Facilities were turned over to the Coast Guard, which operates a LORAN station there.

The Aleuts in Japan were kept under house arrest in Hokkaido, working for nominal wages at menial tasks. There was almost 50 percent attrition among the Attuans, the highest level among the Aleuts. The captives were repatriated to California, and only after strenuous protests allowed to return to Alaska. Attu had been destroyed, and the government, arguing that it could not care for the natives there, refused to let them return to their home island. They were instead offered a place at Atka, the home of their traditional enemies.

Attu is significant in the World War II in Alaska historic context. Under the Japanese Occupation and Allied Military Operations themes, it was the main battle site of the Northern Pacific campaign, hard fought at great cost to both sides, with the Aleutian weather causing more American casualties than combat. The seizure by the Japanese of Attu and Kiska committed the Allies to a campaign in the Northern Pacific, tying up troops and equipment which could have been more effectively deployed elsewhere. It also represents the only occupation of North American territory by an enemy force since the War of 1812, and the only opportunity to study Japanese cold weather military field operations of the World War II era. The recapture of Attu was a military victory, making the Japanese position on Kiska untenable, and air operations against the Kuriles helped tie down Japanese troops during the latter part of the war. Attu is also significant under the Native/Civilian Affairs theme, since it was the only site of the removal of Aleuts by enemy forces. The comparison between Japanese and US removal policies and treatment is instructive, and shows few major differences in the handling of native peoples in a war zone, especially as the Aleuts were prevented from resettling their village by the US government at war's end.

Facilities Description. The Japanese took over the Aleut village of Chichagof Harbor as their headquarters but razed it during their August, 1942 evacuation. Facilities constructed were of a semi-permanent nature, dug in with raised wooden duckboard flooring and built-in bunks. Elaborate trench networks were constructed. The Japanese tried to construct a 3000 ft. airstrip without heavy equipment at Holtz Bay, but it was unfinished. An aircraft warning radar was emplaced at an undetermined location in Chichagof Harbor and the largest Japanese artillery available were dual-purpose AA/anti-tank cannon. Virtually all Japanese facilities were destroyed in the battle or in the subsequent construction. Even Japanese graves were removed to the military cemetery at Fort Richardson.

The US Army garrison was to provide housing, services and utilities for 8500 troops, primarily on the north side of Massacre Valley and at Alexai Point, where two landing strips (3000 x 150 ft. and 5500 x 150 ft.) surfaced with pierced steel planking, were constructed. The Alexai Point air facility had taxiway, hardstands, six Kodiak T (100 x 158 ft.) hangars, one portable steel (Yakutat) hangar, shops, and storage for 380,000 gallons of aviation gasoline, 500,000 gallons of regular gasoline and 3.6 million gallons of fuel oil. Rock cut tunnels were blasted for cold storage and warehousing by civilian contract personnel of the West Construction Company. A 400 bed hospital was built. Power was provided by 25 diesel generators, while water supply was provided from drilled wells and dammed streams.

The Navy Town facilities were built at the head of Massacre Bay near Casco Cove. This base had two 5000 x 150 ft. airstrips surfaced with pierced steel planking (these were later asphalted) and a seaplane ramp with seven Kodiak hangars (100 x 158 ft.) and 28 revetments. Storage for 1.2 million gallons of aviation gasoline was built. Housing, service and utilities for 7700 troops were built. Major naval facilities included ship servicing (from a 1000 ton rated drydock), a submarine base and a PT-boat base. Related naval stores, shops, two ship docks, one barge dock, and one LST ramp were constructed. The base was initially protected by 155 mm rifles on Panama mounts. Later SCR-296 surface vessel radars were constructed at Chichagof Point, Murder Point and

Alexai Point, with SCR-582 harbor radars being added at Alexai Point and Khlebnikof Point. Submarine nets, some buoys and detection loops were also emplaced. Local defense (36 machine gun and 21 antiaircraft emplacements) installation were built. Blasting (roads, tunnels) was conducted by civilian contract labor (West Construction Company). Except for infantry observation posts, the Holtz Bay, Chichagof Harbor and Sarana Bay areas were not utilized.

Present Conditions. The ACOE (1977:43-44) inventory of remains on Attu includes a total of 664 hut-type structures, 236 wooden buildings, 93 concrete foundation, five concrete structures (bunkers), 26 elephant steel magazines, boilers, utility poles, 92 storage tanks of various sizes (wood and metal), plus miscellaneous debris. Watercraft (barges and landing craft) were also noted, as were downed aircraft. Many of the World War II era remains exist in a deteriorated condition.

Other Relevant Concerns. The Attu battlefield is spread over an area of 15 square miles. Much of that area was heavily bombarded with everything from local small arms fire to aerial and 14-inch naval bombardment. Assuming a 10 percent dud rate (Westing, 1985), the area is potentially covered with unexploded ordnance which creates a hazard. The Navy erected a marker commemorating the battle on Engineer Hill, the site of the last Japanese suicide attack, in 1950. The razed Aleut village at Chichagof Harbor also has a marker; the gravesite of the schoolteacher, Charles Jones, is also marked (although the remains were removed to Fort Richardson). The graves at the Little Falls cemetery were moved after the war, but the site remains. Japanese 75 mm guns are found at the abandoned Holtz Bay airstrip, and destroyed Japanese floatplanes have been reported for the same area. A P-38 at Temnac Bay has been placed on the National Register, and the possibility exists that there are other World War II downed aircraft on Attu. Various construction vehicles and watercraft are also reported present on Attu. A chapel on Hogback Ridge dates to after the battle, but has trees planted by GIs, some of the few present in the Aleutians.

Attu has been accorded National Historic Landmark status. It is the site of a USCG 30-man LORAN station and is under the jurisdiction of the USFWS. The entire island is part of the Aleutian National Wildlife Refuge, with most of it being designated as wilderness. McCartney (1972) reports a total of 13 archeological sites on Attu, many of which were damaged by World War II activities.

Management Recommendations.

1. A detailed field survey of the Attu battlefield should be made to better define the boundaries of the action. This should include both aerial and ground reconnaissance and consider areas of ordnance impacts. Battlefield remains should be mapped and documented, particularly US and Japanese lines; including trenches, foxholes, fortification/gun emplacement and other remains such as barracks, hospitals, dumps and other support facilities.
2. The Japanese landing site at West Holtz Bay and the US landing sites at Austin Cove (Beach Scarlet), Gottsov Point (Beach Red) and Massacre Bay (Beaches Yellow and Blue) should be documented and marked.

3. The uncompleted Japanese landing field at Holtz Bay should be documented and marked as should subsidiary construction and defense facilities at the site (tramways, equipment AA batteries).
4. The site of the Aleut village at Chichagof Harbor, which subsequently served as Japanese headquarters should be surveyed to ascertain what physical remains are extant. If appropriate, these remains should be tested and documented.
5. Battlefield markers are reported to exist at: 1) Massacre Bay, 2) Engineer Hill, 3) Chichagof Harbor and 4) the Charles Jones gravesite. These should be located, stabilized and, if appropriate, supplemented by interpretive materials. The site of Little Falls Cemetery should be located and marked as well.
6. The Army Air Force airfield at Alexai Point should be evaluated with respect to the integrity of its remains. Features at this location include two pierced steel plank runways plus airfield support facilities (taxiways, hardstands, revetments, Kodiak hangers), 40 mm and 90 mm AA batteries, 155 mm Panama mounted batteries, SCR-296 and 582 surface vessel/harbor defense detector station and various support facilities. If evidence of these features is extant, they should be documented and stabilized, with interpretive displays installed explaining the features and role of this advanced combat airfield used in the bombing of the Kurile Islands.
7. The Naval Air Station field and facilities Casco Cove should be evaluated with respect to the integrity of remains of the World War II era. Features in this area include two asphalted runways plus airfield support facilities (taxiways, hardstands and revetments), AA batteries, an SCR-296 surface craft detector facility (disguised as a water tower) and various support facilities. If evidence of these features is extant, they should be documented and stabilized, with interpretive display installed explaining the features and role of this support facility in the post-Japanese expulsion Northern Pacific campaign. Note: this is an active airfield, serving the Coast Guard detachment at Attu.
8. An underground gallery over 3100 ft. long was constructed at the head of West Massacre Valley by the West Construction Company. This are was used primarily for ammunition and bomb storage. It should be identified, evaluated for integrity and safety and documented. If appropriate, it should be stabilized and marked.
9. Attempts should be made to locate, identify, and evaluate the integrity of the civilian construction camp(s) on Attu. There should be documented and tested to investigate the living conditions of civilian workers in the war zone.
10. The hospital area on Engineer Hill should be surveyed to establish its integrity and documented. Attempts should be made to locate the sites of field hospitals and aid stations which played a role in the May 30, 1943, counterattack by the Japanese. If they can be

located, they should be documented, tested and marked because of their role in the battle and to investigate the status of battlefield medicine in the Aleutian campaign.

11. The US chapel on Hogback Ridge should be evaluated by a structural engineer to determine its condition. If such an examination indicates feasibility, this structure should be stabilized and considered for use as a visitors' center and museum with interpretive displays. An alternate site would be the underground storage galleries noted in Recommendation 8 above. Note: trees were planted at this site at the time of construction.
12. A total of 25 archeological sites are recorded on Attu (Stein 1977), of which 11 are within the area affected by the battle. Most represent village sites of potential importance. AU-1,2 and 12 are in the vicinity of Chichagof Harbor; AU-3, 14, 15 and 25 are in the vicinity of Alexai Point-Bedard Cove; and AU-4 and 5 are at Casco Cove and Murder Point. A small village (AU-11) is noted at Austin Cove (Beach Scarlet) and a large village site (AU-24) is reported at the head of Sarana Bay at Lake Nicholas. Sites on the Gilbert Ridge-Sarana Bay peninsula are excluded, since this area was outside the battlefield zone. Most of these sites have been damaged by World War II and/or subsequent construction activity. Attempts should be made to locate these sites and evaluate their integrity. If appropriate, investigations designed to establish eligibility for the National Register should be undertaken in conformance with Section 110 of the National Historic Preservation Act.
13. A P-38 aircraft on the National Register is located in Temnac Bay. Battlefield reports lists the remains of Japanese float fighter aircraft near the Holtz Bay airfield. Several F4-F Wildcats operating from the escort carrier USS Nassau were lost during the battle and may have crashed on Attu, as may other aircraft. Attempts should be made to locate such remains and evaluate them in accordance with the recommendations presented in Appendix C.
14. Various vehicles and examples of construction equipment dating to World War II are reported on Attu, including both Japanese and US examples. Attempts should be made to locate such remains and evaluate them in accordance with the recommendations presented in Appendix D.
15. Various watercraft - including Japanese and US landing craft - have been reported on Attu in the past. In addition the cableship SS Dellwood sank in Massacre Bay. Attempts should be made to locate any such remains and evaluate them in accordance with the recommendations presented in Appendix D.
16. A battlefield museum with interpretive displays should be established on Attu. Although Attu is currently inaccessible, requiring military clearance and transport for visitation, plans should be made for interpretation of the remains as Attu has been designated a National Historic Landmark.

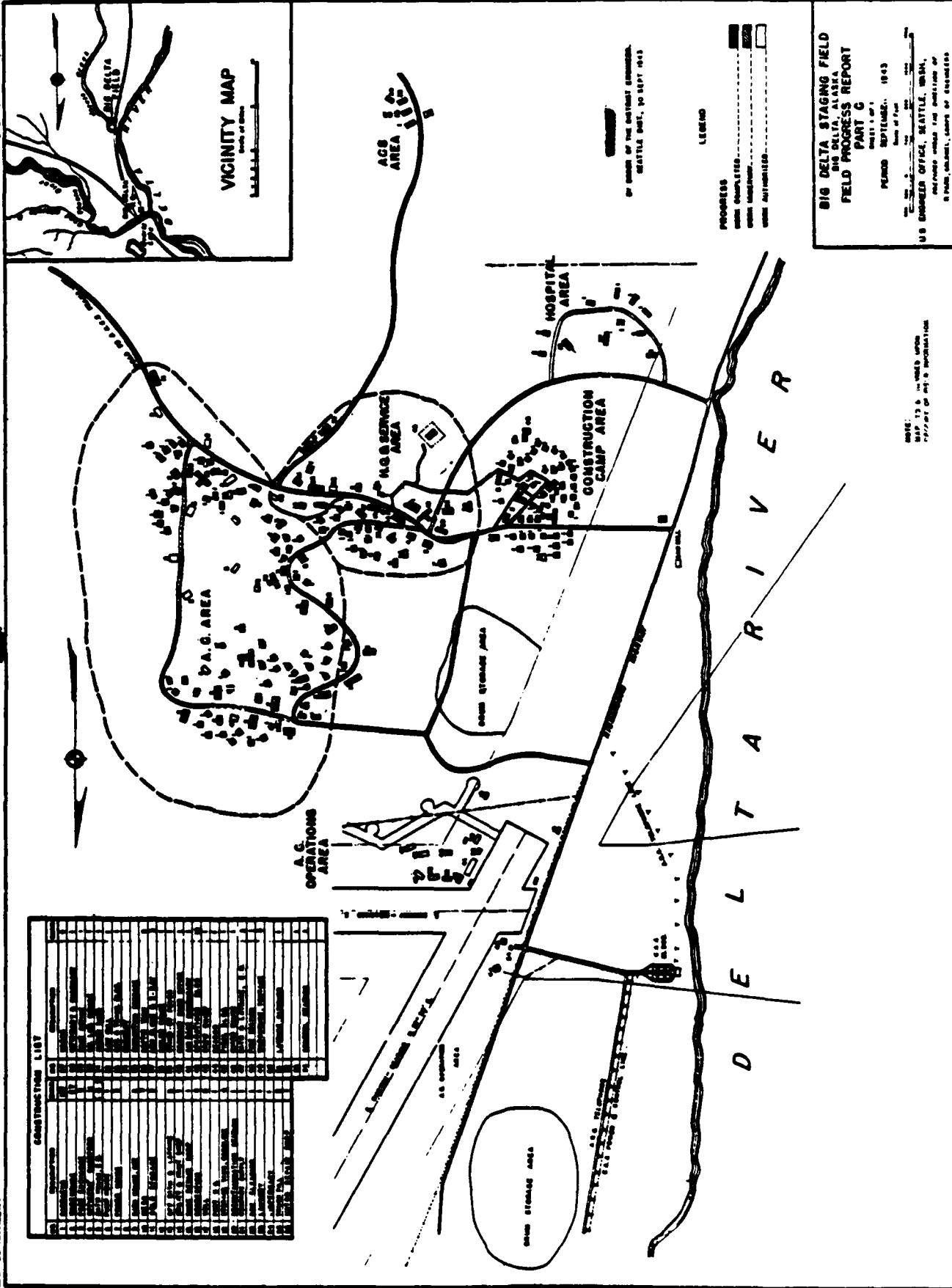
17. Attu is part of the Aleutian National Wildlife Refuge administered by the USFWS. Most of the island is designated as wilderness area. The US Coast Guard leases, "Navy Town" from the USFWS. The Aleutian and Pribilof Islands Regional Native Corporation also maintains an interest in Attu. These agencies should review specific recommendations regarding preservation plans for Attu.

5.3.11 Big Delta

During August, 1940, the CAA was asked to survey airfields with military use in mind. By late 1941, sites were selected, plans drawn up and construction begun at 11 sites, mostly in the interior, including Big Delta where the Richardson Highway crosses the Tanana River. One of the reasons for the construction of an air facility at Big Delta was to provide an intermediate station along the developing Northwest Staging route, the interior route through Canada designed to be immune to enemy attack which might occur if a coastal route were used. The problems experienced with the initial ferrying of aircraft led to the establishment of the Air Transport Command (ATC) and a more professional system of moving aircraft, men and materiel to the interior of Alaska.

In July, 1941, negotiations began with the USSR over Lend Lease transfer. The North Atlantic ocean route was subject to submarine interdiction and the South Atlantic route involved a 13,000 mile trip through South America to Africa and Iran. The US proposed a route through Alaska to Siberia as being closer and more secure. The Soviets resisted since they did not have adequate Siberian bases to handle the proposed volume, did not want Allied personnel in Siberia, and feared that the route would provoke the Japanese. However, the relative ease of transfer led to an agreement to establish the Alaska-Siberian, or ALSIB, route. The ATC established its headquarters at Great Falls, Montana, and the first Lend Lease aircraft was turned over in August, 1942. A total of almost 8000 aircraft were transferred over the route between 1942 and 1945. The ATC simultaneously followed the route with flights to resupply interior Alaska.

In February, 1942, the Alaska-Canadian (ALCAN), or Military Highway, was approved by the US and Canada. The route was roughly parallel to the Northwest Staging route. In spring, 1942, US engineer construction troops began working on the segments between Big Delta and the international border, using Big Delta as headquarters. This construction was accomplished over the 1942-1943 seasons. In 1942, after the attack on Dutch Harbor, the CANOL project was expanded to include CANOL 4, a pipeline following the ALCAN Highway from Whitehorse, Yukon Territory, to Fairbanks to supply petroleum products to the interior. By 1943, as the military situation changed, this project was turned over to civilian contractors. CANOL 4 supplied the interior with oil beginning in 1944. An additional construction project of note, paralleling these, was the ACS telephone landline which followed the ALCAN/CANOL route. Installed with inadequate equipment under extreme conditions and time pressure, this is considered a major accomplishment of the Signal Corps in Alaska during World War II.



F: re 5-9, BIG DELTA

To support all these activities, the original CAA airfield was expanded and garrison facilities were constructed beginning in July, 1942. In addition to the problems of high-latitude and cold weather construction, the engineers had to contend with the problem of a semi-wild bison herd. Buffalo had been introduced some time earlier and had increased in number, requiring the fencing of the installation, especially the runways, to prevent the animals from wandering into the path of aircraft. The area was moderately forested, and the ACOE assumed the operation of a small, local sawmill to provide lumber for construction at Big Delta and along the ALCAN in general. Lack of supplies delayed the essentially simple construction at Big Delta, and it was turned over to the ATC in August, 1943, for completion and operation. The ATC designated the facility as Station 17, operating it until the end of the war in 1945. Big Delta was reopened by the Army in 1947, serving as a training facility. It was eventually renamed Fort Greely. It is still a major active facility.

Big Delta is significant within the World War II in Alaska historic context under the Lend Lease theme. As one of the few sites associated with the transfer of military aircraft to the USSR, it participated in a program which provided crucial military aid to an ally. The program was to some extent responsible for keeping the USSR in the war and contributed to the defeat of the Axis powers. The location is further significant under the Transportation/Logistics theme for its association with the ATC Northwest Staging route, the ALCAN Highway, the CANOL 4 Pipeline and the Richardson Highway. While the primary resupply function was performed by sea, the interior air and surface routes played a major role in the development and defense of Alaska. Finally, the Cold Weather/Engineering theme may be cited as well with respect to the difficulties of high-latitude, cold weather construction (Fort Greely's primary mission is Arctic training), exemplifying the nature of operations in the Alaska theater during the war.

Facilities Description. The original CAA installation consisted of a 4450 x 300 ft. east-west and a 5300 x 300 ft. northeast-southwest runway plus CAA communications facilities to the west, across the Richardson Highway and along the Delta River. It also included a construction camp south of the runway. The garrison facilities, designed to accommodate 800, were built to the southeast of the runways, utilizing Quonset and T/O (frigid zone) construction. Four 25,000 gallon fuel tanks were also constructed. A small hospital facility was built south of the construction camp. No particular defensive facilities were built. A third runway (7000 x 300 ft.) was authorized in 1943, but was not built. All runways were asphalt surfaced (Bush 1944). A permanent hangar was built in 1944.

Present Conditions. The area involved is now Allen Army Air Field, part of Fort Greely, an active Army installation. The exact extent of alteration of World War II facilities at this location is unknown. The hangar is still extant, but has been altered.

Other Relevant Concerns. The Trans-Alaska Pipeline, constructed in the 1970s follows the Richardson Highway through Big Delta. The extensive alteration entailed in this construction project may have affected the World War II era remains. Constant use since World War II also means that there has probably been significant modification. There are no prehistoric or historic archeological sites recognized in the immediate area of Big Delta.

Management Recommendations.

1. A reconnaissance survey should be made to locate, identify and evaluate the integrity of World War II era remains at Big Delta. The features of significance at Big Delta would include the airfield associated with Lend Lease, the engineer construction camp associated with ALCAN and CANOL and the CAA construction camp associated with the buildup. If upon evaluation, no significant remains are found, Big Delta should be dropped from the preservation plan. If significant remains are located in one or more of the categories mentioned, they should be documented.
2. As Big Delta is a population center, military base and stop on the ALCAN Highway, it would be appropriate to erect markers and/or interpretive displays commemorating the World War II events at Big Delta.

5.3.12 Biorka

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At this time the evacuation of all civilians, especially Natives, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate Native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

In early July, 1942, the residents of Biorka, a small fishing village on Sedanka Island across Beaver Inlet from Unalaska Island, were rounded up and placed aboard the SS Columbia along with Aleuts and BIA personnel from Akutan, Nikolski, Kashega and Makushin Villages. These people were landed at Wrangell Institute in southeast Alaska on July 13, 1942, and transferred to an abandoned CCC camp at Ward Lake, near Ketchikan on July 17, 1942. The Biorka residents eventually joined the Unalaska evacuees at the camp at Burnett Inlet, though Ward Lake was occupied by refugees until August, 1944, when it was turned over to the Army which in turn briefly used it as a camp until returning it to National Forest Service jurisdiction in October, 1944.

The Biorka residents were repatriated to the Aleutians in May, 1945, where they eventually dispersed to settlements at Unalaska. Attempts were made to resettle Biorka, but a lack of support and jobs eventually resulted in its abandonment. It is currently used, infrequently, as a camp on a seasonal basis.

The removal site of Biorka is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one eighth native blood except those working for military were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to

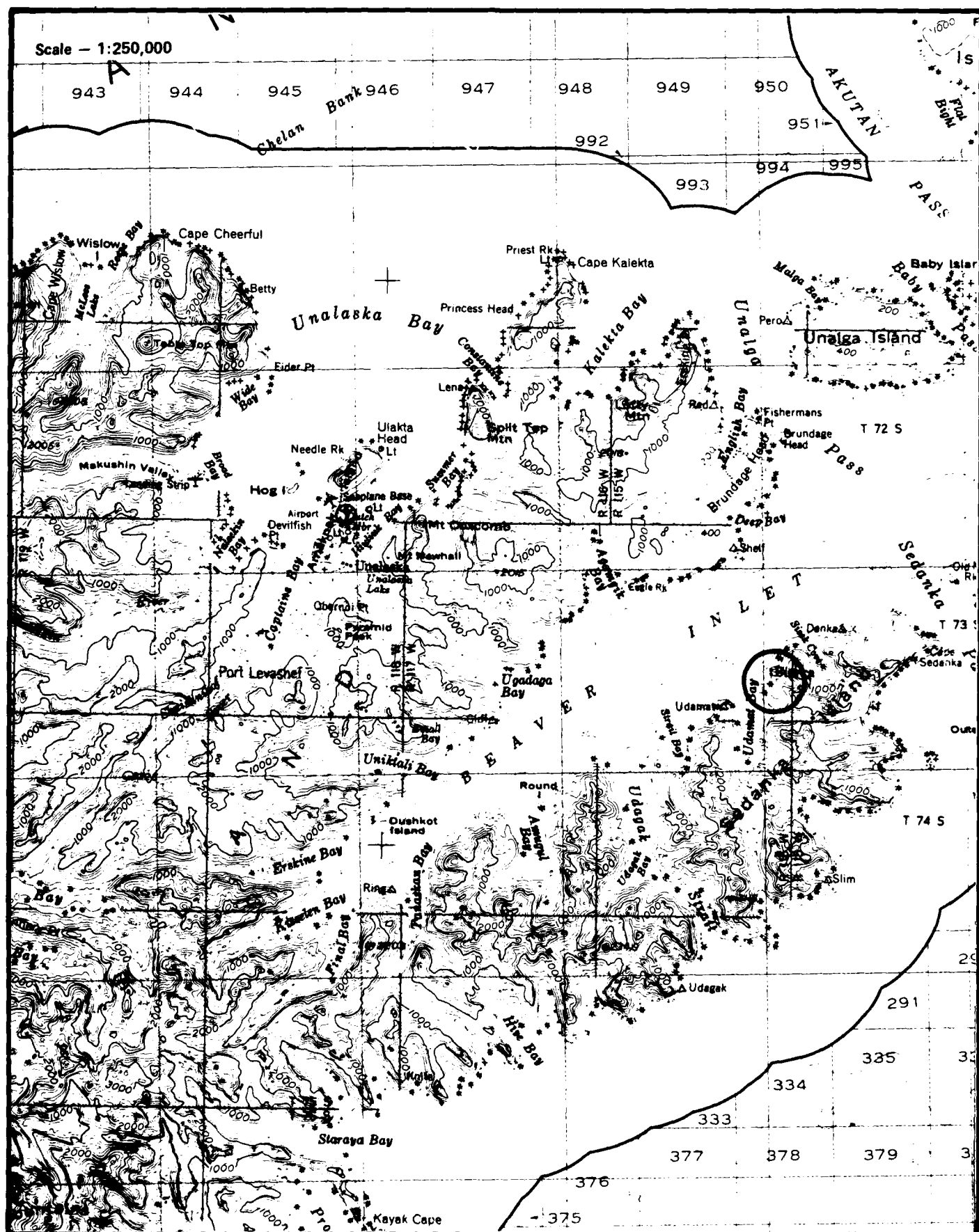


Figure 5-10. BIORKA

poor health care, inadequate housing and subsistence, neglect, and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by U.S. executive order as potential enemies at about the same time. The experiences of the evacuation from the Aleutians was so traumatic that planned evacuation at Nunivak, St. Lawrence and other sites was cancelled.

Facilities Description. No information is known to exist concerning the nature of the facilities at Biorka at the time of the evacuation in 1942.

Present Conditions. No specific information is available concerning the current status of facilities at Biorka.

Other Relevant Concerns. Veltre et al. (1984) contend that Biorka is located on a significant prehistoric archeological site, and that there are others in the immediate vicinity. The presumption is that Biorka was occupied permanently by at least a small population, but no data has been found as to its nature. Neither HR 442 or HR 2415 dealing with Aleut restitution mentions Biorka specifically.

Management Recommendations.

1. Biorka is one of nine Aleut removal sites. Since it is on Native conveyed land and is significant as a Aleut removal site, the Ounalaska Corporation should be consulted regarding what actions they wish to be taken regarding the site. The suggested program would involve a reconnaissance survey to locate, identify and evaluate the integrity of World War II era village remains at Biorka. If no significant remains are located, Biorka should be dropped from the preservation management plan. If significant remains are located, they should be documented and the corporation approached to ascertain if they would accede to a thematic nomination to the National Register. A commemorative marker should be placed at the site.

5.3.13 Burnett Inlet

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At this time the evacuation of all civilians, especially Natives, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate Native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

On July 19, 1942, approximately 110 Aleut residents of Unalaska Island were placed aboard the Alaska Steamship Company's SS Alaska (under contract to the Navy) and taken to Wrangell Institute, where they were temporarily housed in cabanas, some 25 persons occupying each structure. The Unalaskans were then shipped to an abandoned cannery at Burnett Inlet on Etolin Island. The facilities were in a state of disrepair with no electricity or plumbing. There were shortages of food, medicine and supplies. Armed guards were present, giving the evacuees a sense of being interned. Aleuts from Akutan,

Nikolski, Biorka, Kashega and Makushin who had been relocated at Ward Lake, near Ketchikan, were transferred to Burnett Inlet when the Army took over the facility in 1944. In May, 1945, approximately 230 Aleuts from Burnett Inlet were repatriated to Unalaska. Burnett Inlet was closed with the repatriation of the Aleuts.

The relocation site at Burnett Inlet is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel, except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one-eighth native blood were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect, and anomie. Their condition was not dissimilar to that of the Japanese and Nisei interned by US executive order as potential enemies at about the same time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuations at Nunivak, St. Lawrence and other areas were cancelled.

Facilities Description. No detailed information is available concerning the nature of the facilities at Burnett Inlet during the relocation occupation.

Present Conditions. No information is available concerning the current state of facilities at Burnett Inlet.

Other Relevant Concerns. No prehistoric or historic archeological sites are recognized in the immediate area of Burnett Inlet, which is located in the Tongass National Forest.

Management Recommendations.

1. Burnett Inlet is one of four Aleut relocation sites. A reconnaissance survey should be made to locate identify and evaluate the integrity of World War II era remains at the site. If no significant remains are located, Burnett Inlet should be dropped from the preservation management plan. If significant remains associated with the relocation camp facilities are located, Burnett Inlet should be documented, the remains evaluated for stabilization and the site nominated to the National Register. A commemorative marker should be placed at the site.

5.3.14 CANOL Pipeline

Background. A small oilfield was discovered at Norman Wells in the MacKenzie Valley, Northwest Territories, in 1920, and a small operation including a refinery was underway by 1939. In early 1942, it became obvious that supplying petroleum (especially aviation gas) to Alaska was a critical problem, and the US War Department decided to develop a Canadian Oil (CANOL) pipeline to tap the Norman Wells field. CANOL 1 would run from Norman Wells to Whitehorse (crossing the Continental Divide and including a service road

and landline communications), while CANOL 2 would run from Whitehorse to Skagway where a terminal would be built. This was subsequently expanded with distribution spurlines: CANOL 3 (Whitehorse to Watson Lake) and CANOL 4 (Whitehorse to Fairbanks). A consortium of US firms (W. A. Bechtel, H.C. Price and W. E. Callahan) received the contract to build the project, which was approved in May, 1942, and begun in June, 1942. The ACOE was initially responsible for construction, with Standard Oil of California under contract to operate the pipeline with the Canadian Imperial Oil Company running the production operation. The Northwest Service Command took over from the ACOE in December, 1943.

The pipeline used four- and six-inch pipe, required over 100 stream crossings (CANOL 1) and ten pumping stations. A refinery, purchased in Texas, dismantled and shipped by rail to Prince Rupert, by ship to Skagway and again by rail to Whitehorse. The refinery was completed in January, 1944, and received its first crude from Norman Wells in April, 1944. An expanded drilling program had been implemented at Norman Wells, with wildcatting resulting in a total of 51 producing wells by October, 1944. CANOL 2 (four in.) was completed in January, 1943, while CANOL 3 (two in.) went on line in June, 1943, and CANOL 4 (three in.) was operational by November, 1943. Roads, communications (landline), and tank farms were also built. The Norman Wells field never produced enough oil to justify the project, and the main flow was from oil imported to Skagway and pumped to the interior. Alaska Territorial Delegate Anthony Dimond complained that petroleum development should have been focused on Alaska oilfields rather than Canadian fields, and in late 1943, the War Production Board and the Senate's Truman Committee investigated CANOL and censured it as nonessential. The War Department defended the project as necessary to the war effort, but began to cut back its involvement. By the time the project was ready to operate, the war in the Northern Pacific was essentially over. The War Department discontinued operations in June, 1945.

CANOL could not be operated profitably after the war. In 1947, the pipeline was sold for salvage and dismantled. The refinery at Whitehorse was also sold and moved to Alberta. The CANOL highway was also closed. Large numbers of vehicles involved in CANOL construction were abandoned and junked.

CANOL is significant within the World War II in Alaska historic context under the Transportation/Logistics and Cold Weather Adaptation/Engineering themes. While it did not play a significant role in supply during the critical phases of the war, it exemplifies the difficulties and magnitude of supplying the military and civilian operations in isolated Alaska during the war. Built under difficult schedules and arctic conditions, it was a noteworthy accomplishment.

Facilities Description. The CANOL 2 pipeline was a 4 in. line with tank farm and oil dock facilities in Skagway. CANOL 4 - a 3 in. pipe - required 15 pumping substations and tank farms, mostly at Ladd Field.

Present Conditions. The CANOL pipeline was dismantled and sold for salvage in 1947. It is unknown if any original features dating to the CANOL project remain. The ALCANGO, an 8 in. pipeline operated between 1955 and 1971, followed much of the same route of CANOL 2 and 4, and may have destroyed earlier facilities.

Other Relevant Concerns. The vast majority of the CANOL project facilities were in Canada, with only the terminals in Skagway and at Fairbanks representing the role of the project in Alaska. The pipelines, since removed, followed the route of the ALCAN Highway and White Pass and Yukon Railroad.

Management Recommendations.

1. Further documentary research should be undertaken regarding the CANOL project physical remains. Based on available information, the only extant physical remains of CANOL 2 and 4 (1 and 3 are wholly in Canada) are the tanks at Skagway and Fairbanks. If documentary research suggests that physical remains are extant at these or other locations they should be investigated (or sampled if sufficient numbers of remains are noted). If such remains are located, they should be documented, principally through photography.
2. At present the only significant remains of CANOL are considered to be the route it followed, parallel to the ALCAN Highway and the White Pass and Yukon Railroad. Markers and/or interpretive displays along the route should be erected as appropriate. Suggested locations would include Skagway, Fairbanks, Big Delta and the international border (ALCAN). This recommendation should be coordinated with similar recommendations for the ALCAN Highway at the above-mentioned sites.

5.3.15 Cape Prominence

Background. By 1940, the US Army Signal Corps had developed a serviceable if limited aircraft warning radar, the SCR (Signal Corp Radio) 270 (mobile) and 271 (fixed) unit. Initial plans called for nine stations in Alaska, but survey showed that such coverage would be inadequate given the effective operational ranges under Alaskan conditions, and a new plan involving 14 stations was proposed in January, 1941. This was expanded to 20 stations in October, 1941. None would be operational at the outbreak of the war. By January, 1942, due to other priority needs, the Alaska allotment of scarce radar sets was cut to 10, and in March to five. It was decided to allocate these sets to the three main Alaska bases: Sitka, Kodiak and Dutch Harbor.

"Due to the isolation of most detection sites, complete housing and utilities for the operating personnel of about 50 men were provided. Diesel generator power plants, cold storage buildings and other housing were furnished by the ACOE, while the steel detector building and antenna tower were supplied by the Signal Corps. All construction and erection was performed by the ACOE. In many cases the most difficult and costly construction was for landing facilities and access roads or tramways. Each station was planned for self sufficiency . . . The greatest difficulty encountered during the construction of detector stations was means of access (supply). In the majority of cases the sites were isolated from any direct means of travel except by water . . . In many cases no suitable beach was available; the only area suitable for landing operations was after entirely exposed to the action of sea and wind. The urgency of high priority work at the several airfield installation often precluded the diverting of adequate floating equipment to supply the isolated AWS construction forces" (Bush 1944:218-219). The sites had to be located

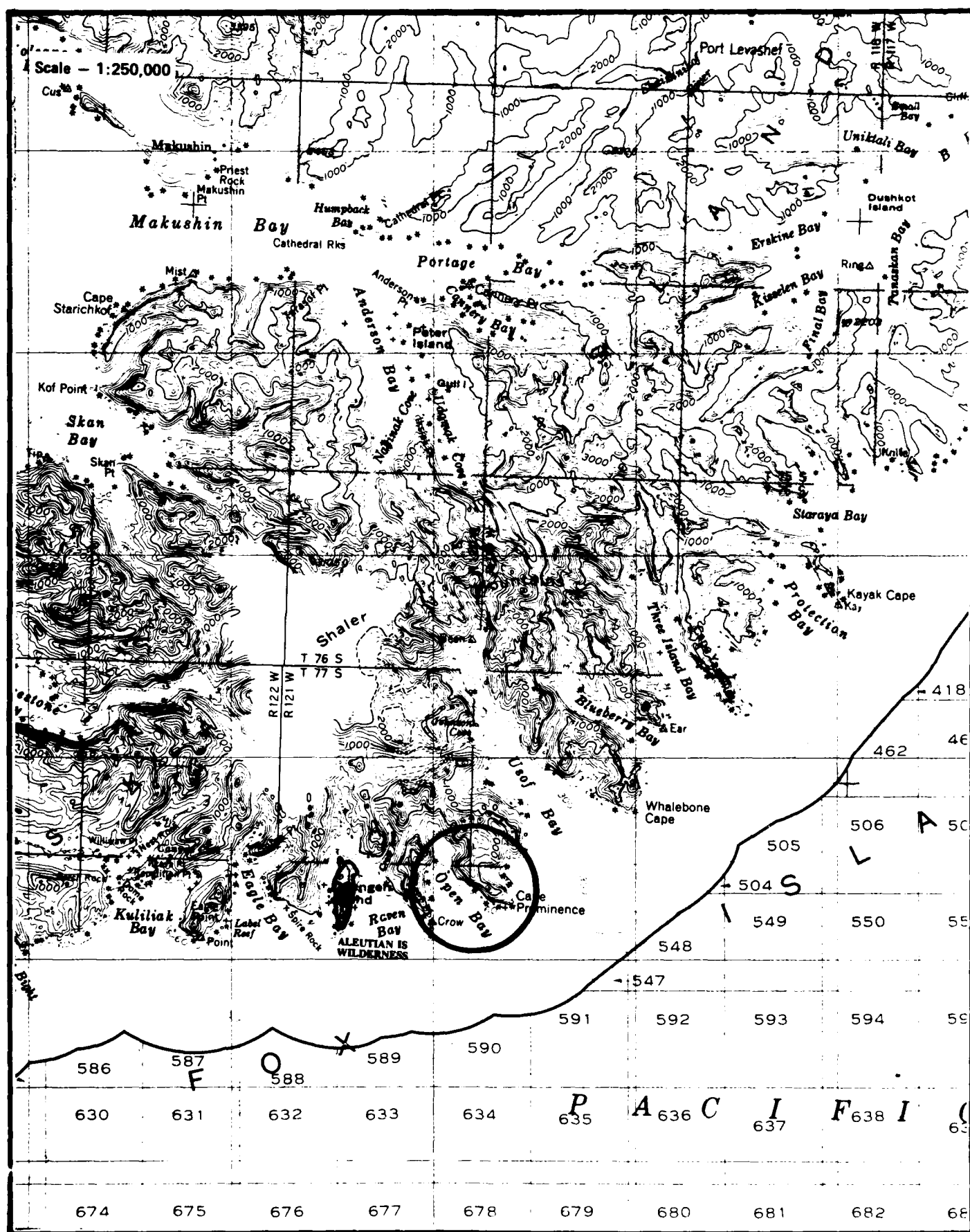


Figure 5-11. CAPE PROMINENCE

away from population and operations centers to avoid electronic interference. The original specifications for the SCR-270/271 series also required an unobstructed 360 degree sweep, calling for positioning on a high point. This required that site access roads be cut.

By late summer, 1942, more SCR-271 instruments had been procured and assigned to various sites in the eastern Aleutians, including Cape Prominence on the south shore of Unalaska Island. Construction began in fall, 1942, with the first order of business being to build a tramway, the most elaborate that would be constructed in an AWS project. The total length was 2400 ft., with at total vertical rise of some 1250 ft. Average grade was 52 percent, with a maximum grade of 81 percent on one section. A 180 ft. trestle bridge was constructed at one place. The unit itself was emplaced in June, 1943, by which time the Japanese were on the point of leaving the Aleutians and its function was highly attenuated. The Cape Prominence station was operated until 1945.

The Cape Prominence AWS station is significant within the World War II in Alaska historic context under the Allied Military Operations, Communications and Cold Weather Adaption/Engineering themes. The introduction of early warning radars represented an attempt to add technological capabilities to traditional defense installations. The installation of aircraft radars in Alaska represents one of the first uses of the technology by the US in an operational area (such radars had been in tactical use by the British, and were emplaced on the US mainland and at Pearl Harbor, but basically the US lacked sites in operational areas other than Alaska in early 1942). The communications capabilities were enhanced by radar monitoring. The ACOE, in charge of preparation of the sites and facilities, had, as indicated above, to overcome the difficulties of supply and shortage to construct the station. This involved the construction of a tramway to solve the engineering problem of access.

Facilities Description. Few specific details are available concerning the facilities at Cape Prominence AWS station. A 2400 ft. wooden trestle tramway was built to provide site access, as were temporary lighter dock facilities. The site was designed to support a team of 50 technicians and support personnel, housed in hut-type structures. The unit itself was a steel tower approximately 25 ft. high supporting a 50 ft. antenna.

Present Conditions. No specific information is available about the present status of remains at Cape Prominence AWS station.

Other Relevant Concerns. No archeological sites are reported for the immediate vicinity of the Cape Prominence AWS station (McCartney 1972; Stein 1977). The land is owned by the Ounalashka Corporation.

Management Recommendations.

1. There are numerous AWS station sites located in Alaska, but only three were served by access tramways. The Cape Prominence AWS site should be surveyed to ascertain if the integrity of physical remains associated with World War II. If no remains are located, the Cape Prominence site should be eliminated from the preservation management plan. If remains are identified, they should be

evaluated for significance and documented. The feature of primary interest at the site is thought to be the access tramway, exemplifying the difficulties of installing and maintaining such isolated stations.

2. Since the land has been selected by the Native corporation, the Unalashka Corporation should be consulted regarding specific recommendations.

5.3.16 Cape Wislow

Background. By 1940, the US Army Signal Corps had developed a serviceable if limited aircraft warning radar, the SCR (Signal Corps Radio) 270 (mobile) and 271 (fixed) unit. Initial plans called for nine stations in Alaska, but surveys showed that such coverage would be inadequate given the effective operational ranges under Alaskan conditions, and a new plan involving 14 stations was proposed in January, 1941. This was expanded to 20 stations in October, 1941. None would be operational at the outbreak of the war. By January, 1942, due to other priority needs, the Alaska allotment of scarce radar sets was cut to 10, and in March to five. It was decided to allocate these sets to the three main Alaska bases: Sitka, Kodiak and Dutch Harbor.

"Due to the isolation of most detection sites, complete housing and utilities for the operating personnel of about 50 men were provided. Diesel generator power plants, cold storage buildings and other housing were furnished by the ACOE, while the steel detector building and antenna tower were supplied by the Signal Corps. All construction and erection was performed by the ACOE. In many cases the most difficult and costly construction was for landing facilities and access roads or tramway. Each station was planned for self sufficiency . . . The greatest difficulty encountered during the construction of detector stations was means of access (supply). In the majority of cases the sites were isolated from any direct means of travel except by water . . . In many cases no suitable beach was available; the only area suitable for landing operations was entirely exposed to the action of sea and wind. The urgency of high priority work at the several airfield installation often precluded the diverting of adequate floating equipment to supply the isolated AWS construction forces" (Bush 1944:218-219). The sites had to be located away from population and operations centers to avoid electronic interference. The original specifications for the SCR-270/271 series also required an unobstructed 360 degree sweep, calling for positioning on a high point. This required that site access roads be cut.

The Cape Wislow SCR-271 station was authorized in March, 1942. Despite the relatively high priority assigned to its completion, there were considerable delays in its construction. Supplies, material and personnel had to be lightered from Dutch Harbor, a trip which could take eight or nine hours in heavy seas, with no guarantee that a landing could be made on arrival, as no anchorage was available. Several trips could be required before any landing could be made. The steep slope at Cape Wislow also required that a 1700 ft. tramway be constructed to haul supplies from the narrow beach to the plateau on which the station was erected. The attack on Dutch Harbor on June 3-4, 1942, also caused delays when necessary parts were destroyed in a warehouse bombed during the raid. The AWS station was not operating at the time of the

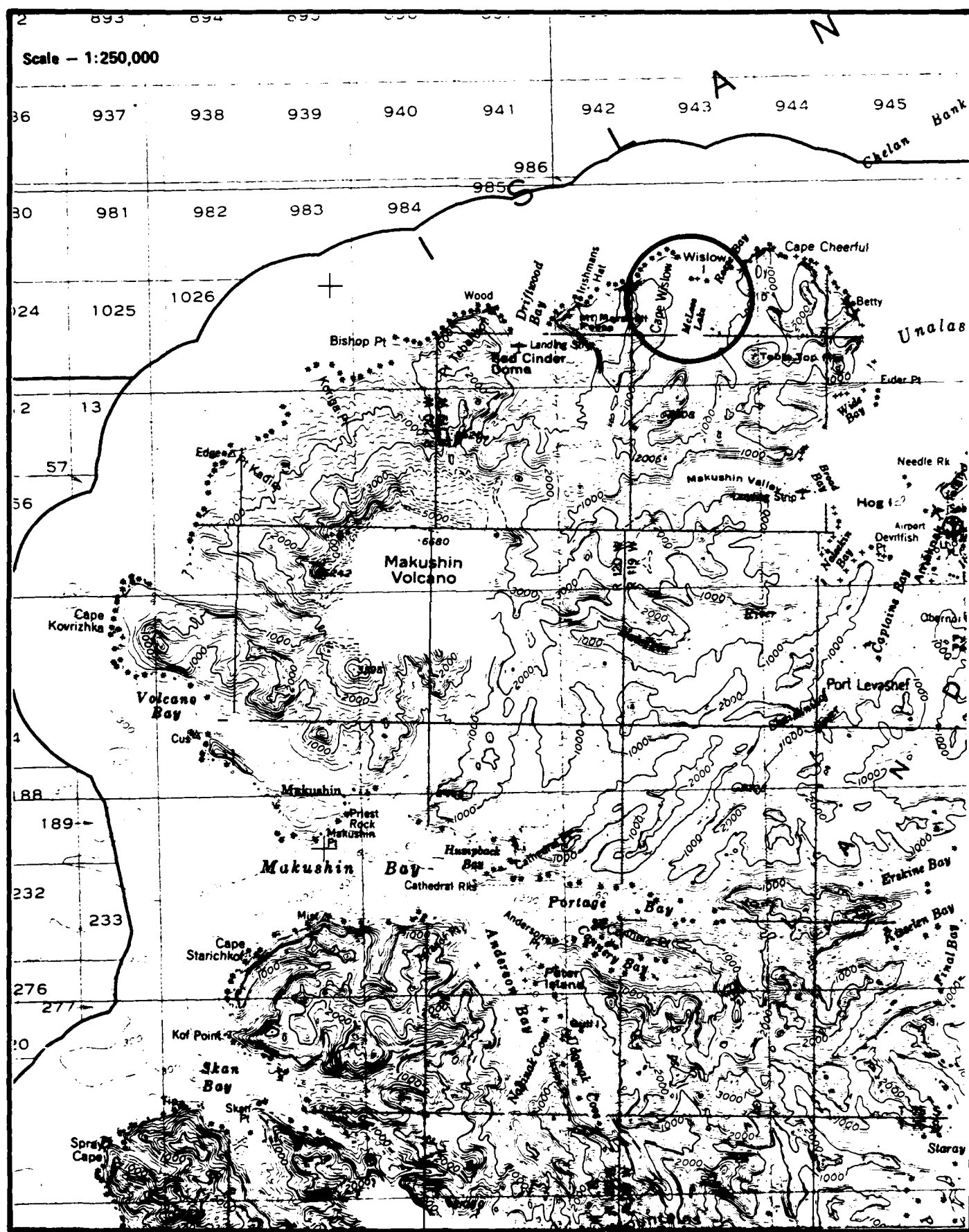


Figure 5-12. CAPE WISLOW

attack, and was not a target, but suffered from a lowered priority in the aftermath. Parts were also apparently lost in the raid and replacements were not available until September, although the unit was emplaced and ready for operation in August, 1942. With breakdowns and supply problems, the Cape Wislow AWS station operated intermittently until the end of the war.

The Cape Wislow AWS station is significant within the World War II in Alaska historic context under the Allied Military Operations, Communications and Cold Weather Adaptation/Engineering themes. The introduction of early warning radars represented an attempt to add technological capabilities to traditional defense installations. The installation of aircraft radars in Alaska represents one of the first uses of the technology by the US in an operational area (such radars had been in tactical use by the British, and were emplaced at US sites in operational areas other than Alaska in early 1942). The communications capabilities were enhanced by radar monitoring. The ACOE, in charge of preparation of the sites and facilities, had, as indicated above, to overcome the difficulties of supply and shortage to construct the station. This involved the construction of a tramway to solve the engineering problems of access.

Facilities Description. Few specific details are available concerning the facilities at Cape Wislow AWS station. A 1700 ft. wooden trestle tramway was built to provide site access, as were temporary lighter dock facilities. The site was designed to support a team of 50 technicians and support personnel, housed in hut type structures. The unit itself was a steel tower approximately 25 ft. tall supporting a 50 ft. antenna.

Present Conditions. Aerial reconnaissance of Cape Wislow in July, 1985, revealed that the radar unit itself (antenna and support tower) was not in evidence. Various remains of housing, utility structures and earthworks were evident. The trestle tramway remains in place, but in a deteriorated condition.

Other Relevant Concerns. One small archeological site was reported on the spit below Cape Wislow (McCartney 1972) and another site is located at the eastern edge of McLees Lake (McCartney, personal communication, 1986); their current status is unknown. The area on which the AWS site is located is owned by the Ounalashka Corporation.

Management Recommendations.

1. There are numerous AWS station sites located in Alaska, but only three were served by access tramways. The Cape Wislow AWS site should be surveyed to ascertain if the integrity of physical remains associated with World War II. If no remains are located, the Cape Prominence site should be eliminated from the preservation management plan. If remains are identified, they should be evaluated for significance and documented. The feature of primary interest at the site is thought to be the access tramway, exemplifying the difficulties of installing and maintaining such isolated stations.
2. Since the land has been selected by the Native corporation, the Ounalashka Corporation should be consulted regarding specific recommendations.

5.3.17 Cold Bay

Background. During August, 1940, the CAA was asked to survey airfield sites in Alaska with military use in mind. Cold Bay, on the Alaska Peninsula, was selected as an airfield site, but actual construction was not begun until September, 1941, under contract with the Morrison-Knudsen Construction Company. The expansion of Cold Bay as a military facility was part of the deal under which Fort Glenn on Umnak was planned, with Cold Bay to provide protection for Dutch Harbor, 185 miles to the southwest. This project was not approved until after Pearl Harbor in December, 1941, but the ADC had already begun clandestine military construction with diverted CAA funding. Supplies and equipment were shipped to the fictitious "Saxton and Company," a supposed cannery operation. The ACOE took over construction responsibilities from Morrison-Knudsen in February, 1942.

By March, 1942, a 3200 ft. runway was operational at Cold Bay, with extension to 5000 ft. and an additional 5000 ft. cross runway being ready within two weeks of around-the-clock shift work. By April, four layers of asphalt surfacing had been poured. The base was declared operational in late May, with the first combat aircraft being ordered there (over the objection of General Butler, the Eleventh Air Force commander, who argued that the primitive facilities could not support operations) as the Japanese threat built up. By June 1, there were 16 P-40s and six B-26s at Cold Bay. The Japanese attacked Dutch Harbor on June 3, 1942, and fighters at Cold Bay scrambled, but did not arrive at Dutch Harbor until after the Japanese had retired. In the subsequent search for the Japanese fleet, Captain George W. Thornburgh located and attacked the carrier Ryujo, albeit without success. Thornburgh returned to Cold Bay to rearm and was lost on the return trip, having failed to relocate the fleet. The airfield at Cold Bay was named Thornburgh Field in his honor (the base was designated Fort Randall, after Major General George N. Randall who had commanded Gold Rush era Fort St. Michael and built the Seattle-Skagway submarine cable link). The airfield at Cold Bay played a major role in the abortive search for the Japanese fleet, with at least two other crews being lost while operating out of Cold Bay. The garrison was reinforced by B-24s and B-17s, but after the Japanese occupation of the Attu and Kiska was discovered, the aircraft shifted their focus to Fort Glenn, almost 200 miles closer to the enemy. Cold Bay became a staging area and supply point.

The Navy established a post adjacent to Cold Bay at Mortensen Point in July, 1942, with 6-inch guns emplaced to protect the harbor. This facility, including a dispersion airfield, was maintained until November, 1944. Runways at Fort Randall were extended to 7500 x 500 ft. and hangar and dock facilities were built, as were housing, services and utilities for 9000 personnel. Aircraft Warning System (AWS) radar were installed nearly at Cape Lazaref and Deer Island, and the site for an SCR-588B unit was prepared at Frosty, but the equipment was subsequently sent further west in the Aleutians. Storms in 1942 and 1943 delayed dock construction, and supply was a chronic problem. The exposed terrain required that structures be dug in to ground level and in some cases guyed at the corners to counteract wind damages. Fires were particularly prevalent at Cold Bay. An observation post to monitor the Bering Sea approach was established on Amak Island, as were posts along Izembek Lagoon (specifically at Grant Point). Another observation post was located at Pavlof.

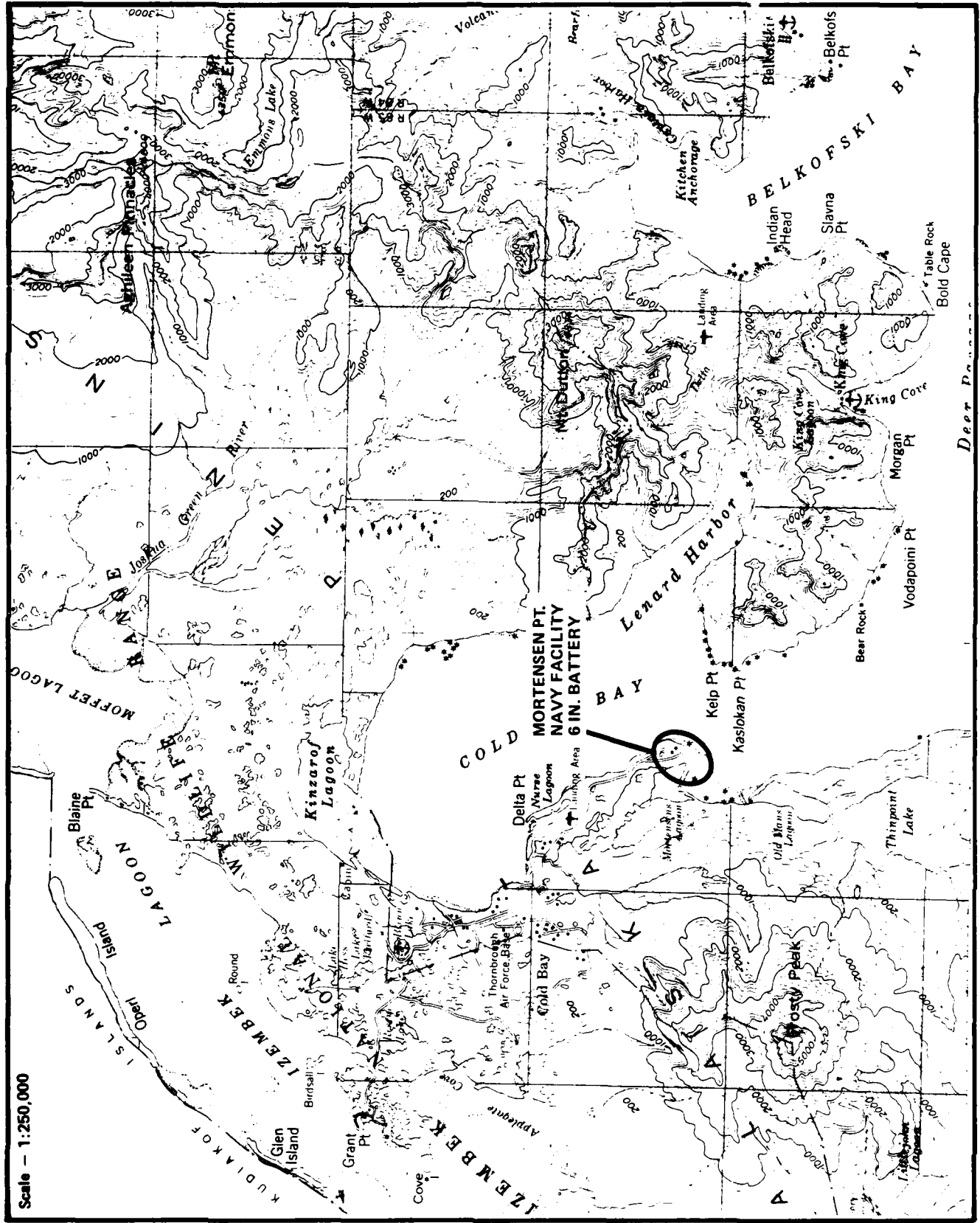


Figure 5.13. COLD BAY

Cold Bay had its last moment of glory when it was used as the staging area for troops coming from the West Coast for the invasion of Attu in May, 1943. After that, its role was strictly one of resupply and aircraft ferrying. The garrison was reduced in 1944, almost to caretaker status. Cold Bay was revived as a liaison post for transfer of Lend Lease shipping (mostly submarine chasers) to the USSR and for Hula-2, a secret mission designed to train Soviet troops for amphibious operations in the pending USSR entry into the war with Japan in 1945. The operation was closed down with the end of the war. Cold Bay had been used as a dump for lumber received from the Soviets in return for Lend Lease aid, and the Russian liaison contingent reportedly built a kashim as an officers club.

Cold Bay was transferred to the USAF in 1947, which maintained it on caretaker status until 1950. A DEW Line main station was operated at Cold Bay from 1957 through 1969. A White Alice station was built there, and the facility was again reactivated for Great Circle resupply during the Viet Nam War (1965-1974).

Cold Bay is significant within the World War II in Alaska historic context under the Allied Military Operations theme. Its combat role during the Dutch Harbor raid and its staging role for air operations during the Kiska Blitz and the invasion of Attu were important in the Northern Pacific campaign. Its resupply role exemplifies the difficulties of transportation and logistics in Alaska in World War II. Under the Lend Lease theme, military shipping was transferred to the Soviets at Cold Bay and joint training under the Hula-2 project exemplifies US-Soviet cooperation during World War II.

Facilities Description. The focal point of the facility was a pair of airstrips each 7500 x 500 ft. in final configuration and paved with asphalt. Associated facilities included hardstands, taxiways and revetments, plus three Kodiak T hangars. Storage included a fuel dump with 1.075 million gallon capacity, 151,240 square feet of warehouse and 44,800 square feet of cold storage. A ship dock was eventually built. There were housing, service and utilities for a garrison of 9000, including a 400-bed hospital. The Navy facility included a 5000 ft. airstrip, seaplane facilities, dock, fuel storage, 6-inch coast defense batteries, and housing, services and utilities for 500. Construction was primarily of Quonset and Pacific Huts, T/O (frigid zone) and KD type structures. A civilian construction camp existed to the north of the north-south runway on the bluff overlooking the bay.

Present Condition. Construction of airfield facilities subsequent to World War II has altered the character of the original facility. A town of about 400, housed in postwar modular construction, occupies much of the area between the runways and the bay, including the dock area. DERA cleanup was completed by Chris Berg Inc., during the 1985 season and very little of the World War II facilities remain. A brick powerhouse, some structures south of the east-west runway (the Lake Donna/Kansas Road area) and the Navy area around Mortensen Point are essentially all that remain of Fort Randall.

Other Relevant Concerns. Cold Bay currently serves as the air transport/communications hub for the Alaska Peninsula. It has FAA, US Weather Bureau, USFWS, USAF, RCA Alascom, University of Alaska research station, and private airline units located there. The area south of the airstrip consists of conveyed and selected native lands, while the community site itself is state land. Remaining affected lands are under USFWS jurisdiction and comprise the Izembek National Wildlife Refuge, most of which is classified as wilderness.

While there are prehistoric archeological sites known in the general area, only one has been reported in the immediate vicinity of the World War II area. It is also in the area of the main community, and has probably been destroyed.

Management Recommendations.

1. Cold Bay is the site of one of only six advanced airfields in Alaska which actually saw combat during World War II. It is also one of three ports involved in Lend Lease shipping and served as the main transfer point. Very few physical remains are extant from the World War II era, but the coastal defense installation at Mortenson Point still exists. It should be investigated to assess integrity and documented, particularly the 155mm Panama mounted guns which formed the basis of the harbor defenses.
2. According to local reports, the log kashim north of town was built by Soviet troops as an officer's club. Attempts should be made to confirm this and the structure documented and stabilized as it apparently represents the only physical remains connected with Lend Lease shipping and the Hula-2 operation. This site should be commemorated with a marker if appropriate.
3. Attempts should be made to identify and assess the integrity of the Morrison-Knudsen construction camp located north of the main runway. This camp served the personnel building the CAA facility before it was taken over by the ACOE as a secret project.
4. A marker and/or an interpretive display should be erected at Cold Bay. The site is a transit hub for the Aleutians, the Bristol Bay area and the Alaska Peninsula, so high transient traffic makes this an appropriate location for commemoration.
5. Attempts should be made to relocate the archeological site noted in ACOE (1977:184) within the main community area. This site should be assessed for integrity and, if appropriate, documented for National Register nomination. Land ownership need to be assessed, but if, as presumed, the property is under USFWS jurisdiction, there may be an agency obligation to make the assessment under Section 110 of the NHPA. Note: this site does not appear in McCartney (1973) or Stein (1977).

5.3.18 Dutch Harbor/Unalaska

Background. In 1764, Russian traders under Ivan Solov'iev subjugated the Aleuts on Unalaska. The village of Iliuliuk, or Unalaska, was founded in the 1760s, and has been occupied ever since. Dutch Harbor served as the main port for shipping through Unimak Pass to the Bering Sea, and was particularly active during the Gold Rush era. Dutch Harbor was also the main supply base (operated by the Alaska Commercial Company, the successor to the Russian-American Company) for the Aleutians. The Navy considered establishing a coaling station at Dutch Harbor in 1902, but dropped the idea. A Navy radio station was set up in 1911, and was the only operating Navy facility in Alaska in 1940, when the buildup commenced.

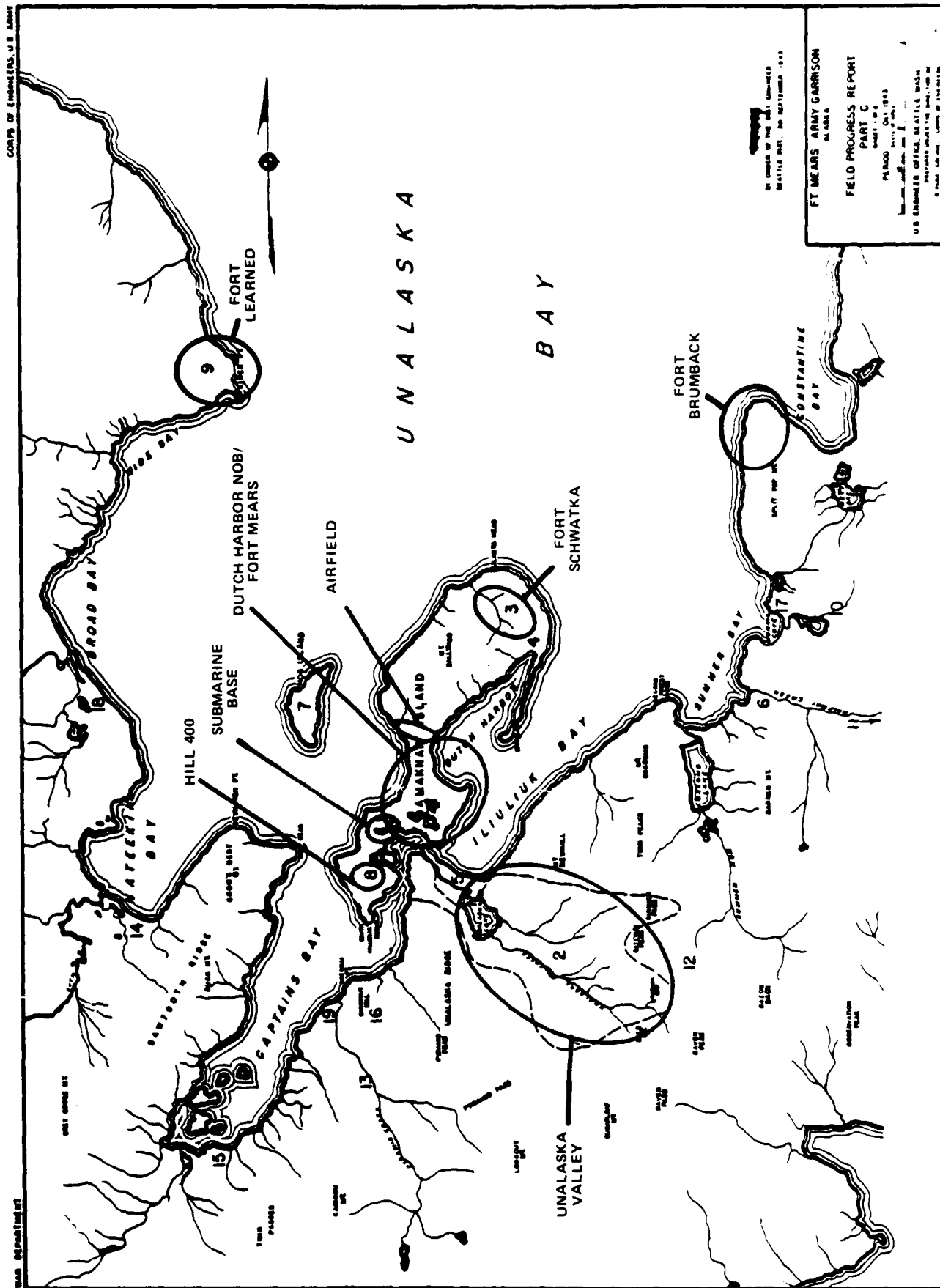


Figure 5-14. DUTCH HARBOR/UNALASKA

In 1938, the Navy's Hepburn Board recommended the construction of facilities of Sitka, Kodiak and a third site (Dutch Harbor was selected later). A total of \$15 million was appropriated, and Contract NOy-3570 was negotiated with Siems Drake Puget Sound, a consortium consisting of Johnson, Drake and Piper Company, Inc., Siems Spokane Company, and Puget Sound Bridge and Dredging Company. Construction began in 1940, but the Greenslade Board recommended additional projects in May, 1941, which were subsequently incorporated into the bases. The Army and Navy negotiated a deal by which the Navy's contractor would construct Army protective garrison facilities. Because Army facilities were added later, they had to be shoe-horned in wherever space was available, resulting in less than optimal siting. Dutch Harbor was also planned using pre-war building types and layouts, which were ill-designed for defense.

In 1941, the village of Unalaska had a population of about 300, 250 of whom were Aleuts. The Navy radio and weather station was housed in the only brick structure in the Aleutians, and there was a small Coast Guard facility in Unalaska. The 450 Siems Drake contract workers were primarily housed in the beached SS Northwestern, while the first Army troops shared space in the Marine barracks. The Navy base was established in January, 1941, and dedicated in September, 1941.

At the other joint bases, Navy construction appropriated the prime areas for facilities construction. The Army argued that it would have to be allocated space on site if it were to adequately defend the Navy base according to its mission. As a result, Army facilities, consisting of pre-war mobilization barracks, were crammed into the Margaret Bay area, where they would be vulnerable to attack.

With the Japanese attack on Pearl Harbor, construction shifted into high gear at Dutch Harbor. Dependents were ordered out of Alaska, and the community of Unalaska was placed on a war footing. Slit trenches and fortifications were dug and antiaircraft guns emplaced. Fuel and ammunition were in scarce supply and as of June, 1942, the facilities were only 35 percent complete. While seaplanes could operate out of the harbor, there was no available land suitable for an airfield. The airfields at Cold Bay and Fort Glenn were to provide air cover, but distance and poor communications, coupled with the unpredictable Aleutian weather, made this arrangement unreliable for tactical defense. Problems such as lack of aircraft meant that constant patrol cover was not feasible.

The US had the capability to read the Japanese naval codes well enough to obtain advance warning if not tactical details of Japanese plans. The plans of the Midway campaign were known, and Dutch Harbor was put on alert in May, 1942.

On the morning of June 3, 1942, Japanese planes from the carrier Ryujo attacked Dutch Harbor. A reported 28 enemy aircraft dropped 34 bombs (an estimated six tons) on the installation. Dutch Harbor endured the attack with little damage being sustained. There was a second attack on the afternoon of June 4, involving 29 aircraft (27 bombs, 6.75 tons). Forty-three US personnel were killed (including one civilian Siems Drake employee). The Northwestern was hit and burned, as was the fuel dump, resulting in the loss of four fuel oil tanks with 22,000 barrels of fuel oil and 625,000 gallons of diesel. The hospital at Unalaska was hit as was an unfinished seaplane hangar. There was concern at the time that Dutch Harbor would be invaded, though as the raid was assessed in the aftermath, it was decided that the attack was a feint.

As the base farthest to the west (saving Fort Glenn, which was a forward operating base with few available facilities), Dutch Harbor became the focus for operations in the Aleutians. A landplane runway was finally gouged out of the side of Mount Ballyhoo (4000 x 300 ft.); it was minimally adequate for local tactical use. This lack of an airfield inhibited the development of Dutch Harbor, but post and storage facilities continued to be built at a rapid rate. A submarine base was opened in July, 1942, with minimal facilities, and drydock repair facilities were added. The Army decided that its mission did not require its presence on Amaknak Island after all, and transferred the bulk of its facilities and operations to Unalaska Valley and Pyramid Valley on the main island. Unlike the initial prewar, frame construction used on Amaknak, the facilities here were composed of hut-type structures. One notable construction was a bomb proof ACS facility consisting of a gallery 70 ft. deep blasted out of the side of the hill in Unalaska Valley.

Following the attack by the Japanese, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island. On July 19, 1942, approximately 110 Aleuts residents of Unalaska Island were placed aboard the Alaska Steamship Company's SS Alaska (under contract to the Navy) and taken to Wrangell Institute, where they were temporarily housed in cabanas, some 25 persons occupying each structure. The Unalaskans were then shipped to an abandoned cannery at Burnett Inlet on Etolin Island. The facilities were in a state of disrepair with no electricity or plumbing. There were shortages of food, medicine and supplies. Armed guards were present, giving the evacuees a sense of being interned. Aleuts from Akutan, Nikolski, Biorka, Kashega and Makushin who had been relocated at Ward Lake, near Ketchikan, were transferred to Burnett Inlet when the Army took over the former facility in 1944. In May, 1945, approximately 230 Aleuts from Burnett Inlet were repatriated to Unalaska. They found that in their absence, their houses and property had been looted. The evacuation had also changed the character of Dutch Harbor. With the evacuation in July, 1942, there were essentially no women and children in the Aleutians, and virtually no civilian activity of any kind.

The role and importance of the base at Dutch Harbor changed rapidly as the situation in the war developed. With the establishment of the base at Adak in September, 1942, the war moved further out the chain, leaving Dutch Harbor as a rear echelon supply base, a role it would play throughout the remainder of the war. Despite the changing situation, facilities continued to be developed, making Dutch Harbor one of the largest and most complex bases developed in Alaska during World War II. Garrison construction was substantially complete by the end of 1943, but, as at other sites, the construction of coast defenses, authorized in May, 1942, was not completed until June, 1944, by which time the need for the facilities was long past. Due largely to the ruggedness of the terrain, Dutch Harbor had a large number of small observation posts associated with it to cover the numerous approaches to the facility. In a practice unique to Alaska in World War II, many were given separate Fort designations. The main Army post was Fort Mears, named after Colonel Frederick Mears, the engineer for the construction of the Alaska Railroad. Other Forts (battery positions) included Ulakta Head/Fort Schwatka, Eider Point/Fort Learnard and Constantine Point/Fort Brumback. Outposts in the vicinity and considered part of the Dutch Harbor post included Morris Cove, Kaletka Bay, Erskine Point, English Bay, Agamgik Bay, Zharaoff Point, Ugadaga Bay (the largest outpost on Beaver Inlet and the submarine cable landing site), Uniktali Bay and Nateekin Bay. There were a series of defensive positions (machine gun and antiaircraft) covering the heights

connecting Unalaska Valley with Beaver Inlet known as the "Iron Ring." Excursion Island was joined to Amaknak to form part of the submarine base, and a considerable amount of dredging and fill work was accomplished in Captains Bay and Iliuliuk Harbor. Attempts were made to build a causeway across Captains Bay to Hog Island, the causeway being used to extend the runway on Amaknak, but initial construction was washed out in a storm and the project was abandoned.

Although the pace of the war and activity at the base slowed after 1943, Dutch Harbor continued to be used as a resupply station through the end of the war. It also served as a minor Lend Lease liaison post, handling Lend Lease shipping through Unimak Pass (later Soviet shipping was diverted to Akutan as Allied war-related shipping monopolized the Dutch Harbor facilities) and as administrative and supply center for the US-Soviet Training base, Hula-2, at Cold Bay in 1945. The Army withdrew in 1945 after the war was over, but the Navy maintained facilities until 1947, when it declared the base surplus. The Coast Guard was approached to take over the facilities, but declined. Some of the military property was sold to private parties before land sales were halted. Unalaska is currently a major fishing port, with facilities operated by the US-Japanese joint venture, Universal Seafood Corporation.

Dutch Harbor/Unalaska is significant within the World War II in Alaska historic context. Within the Allied Military Operations theme it was a battle site, one of the few locations where combat actually occurred in the Alaska theater. An elaborate system of military architecture/coast defenses was constructed, exemplifying the military nature of the development. It was also the main base servicing the undersea war in the Northern Pacific. Within the Transportation/Logistics theme, Dutch Harbor/Unalaska was the main transshipping and supply point for Northern Pacific operations, the only extant harbor at the beginning of the war. Under the Cold Weather Adaptation/Engineering theme, Dutch Harbor/Unalaska represents the clearest example of the adaptation of standard military construction to high-latitude, wartime conditions, changing from standard pre-war to operational, prefabricated building. Under the Native/Civilian Affairs theme, the site represents the role of imported civilian contract labor, and the site of the only recorded combat death of a contract civilian in Alaska, with the potential for investigation the conditions under which workers functioned in a forward area. The removal site at Unalaska is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel, except BIA and USFWS personnel serving the Aleuts, were not removed, while natives and persons with at least one-eighth native blood except those employed by the military were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangement in an area where they had no contacts, and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by US executive order as potential enemies at about the same

time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuations of Nunivak, St. Lawrence and other areas were cancelled.

Finally, Dutch Harbor played a role in the Lend Lease program, which provided much needed goods to the USSR, and arguably enabled that ally to remain in the war, leading the ultimate defeat of the Axis powers.

Facilities Description. Virtually all of Amaknak Island, the core of the Dutch Harbor base, was disturbed by military construction. Fort Schwatka on the east face of Mount Ballyhoo had 155mm Panama mounted cannon, and an 8-inch battery plus bunkers, fire control, communications and mobilization and hut-type housing. A Navy detachment had housing and facilities at the head of Dutch Harbor itself (the area enclosed by the spit in Iliuliuk Bay). Hut-type facilities and a dock were built on Hog Island in Unalaska Bay. Docks, port facilities and transit sheds were built along the south shore of Mount Ballyhoo, and an existing pier was repaired. Seaplane ramps, parking areas and hangars were built, as was a 4000 x 300 ft. gravel surfaced runway and nine revetments, all gouged out of the side of Mount Ballyhoo. Catapult launch and arrestor hook landing gear was installed to compensate for the short landing field. The center portion of Amaknak was covered by Navy facilities (some - power house, torpedo shop - of reinforced concrete) centered around the Navy radio facility, and the Army's Margaret Bay Garrison No. 1. A contractor's camp was located at the Unalaska ferry slip on Amaknak. Expedition Island was connected by fill to Amaknak Island and the submarine base constructed there. A drydock facility was built at the inlet to the west. Hill 400 (also called "South America") had a battery and command post on the summit with housing for contract personnel on the east face near the drydock and for garrison personnel on the west face. The townsite of Unalaska was technically off-limits, but the route from the Amaknak ferry (where a variety of warehouse and shop facilities were built) led through the town, and Army facilities began immediately south of the government hospital site (across from the current town hall). Facilities were built across the Iliuliuk River from town and around the south shore of Unalaska Lake and following the Unalaska Valley for a distance of approximately two and a half miles. On Amaknak, construction followed prewar standard Quartermaster (Series 700) plans. On Unalaska, construction was primarily of hut, cabana and T/O types.

Present Conditions. The DERA cleanup of Dutch Harbor/Unalaska was completed in the 1985 season. The bulk of World War II era features were removed in this operation. Coast defense facilities at Forts Schwatka, Learnard and Brumback and on Hill 400 remain, as do scattered structures on private parcels within the area and among scattered features in outlying/outpost areas.

Other Relevant Concerns. The Sitka Spruce plantation on Amaknak Island (near the ferry dock) was planted by Russian traders in 1805. It represents one of the few occurrences of trees in the Aleutians, and is on the National Register. The Russian Orthodox Church of the Holy Ascension of Christ, dating to 1826, is also on the National Register. The Fort Mears cemetery site (the bodies were disinterred at the end of the war and relocated) is located near Iliuliuk Bay on the north side of Unalaska Valley. The magazines at Dutch Harbor/Unalaska represent an innovation, in that for added protection, the standard Cowin and elephant shelters were dug in to grade and covered with a six in. layer of concrete. In many cases, a concrete blast wall was added in

front of the entrance to protect the magazine from outside explosion and/or protect those outside should it explode. The frame Navy aerology cottage at the airstrip also served as the brig, and the five Japanese POWs from the sinking of the R0-61 at Nazan Bay were held there in transit, the only reported POWs at Dutch Harbor (the Pyramid Valley internment camp was never used for POWs). A 70 ft. deep rock gallery ACS bomb-proof headquarters was reported constructed in Unalaska Valley. The Navy radio facilities, including the "USCG barracks," reportedly the only brick structure in the Aleutians at the outbreak of the war, represent the core of the Dutch Harbor base, the only operating naval facility in Alaska in 1940. Other war related items include the problem of disposal of ordnance. While unexploded duds are not considered a major concern (Japanese ordnance was essentially accounted for), practice rounds and disposed ammunition are of concern. Much ordnance was dumped "at sea" in the vicinity of Dutch Harbor, and some bunkers were sealed in place with their contents using a charge. Some of this ordnance has been reported eroding out of these bunkers (Brooks, OED, Fort Richardson, personal communication).

A large number of prehistoric archeological sites has been reported for the Dutch Harbor/Unalaska area (McCartney 1972, Veltre et al. 1984; Stein 1977), many originally recorded by A.R. Cahn, who was also the officer in charge of preparing the Navy's Dutch Harbor War Diary. Many have been at least partially destroyed either by military or more recent construction. The Dutch Harbor base has been designated a National Historic Landmark. Except for some scattered private holdings, the affected area is owned by the Ounalashka Corporation with portions of it under lease to the Unisea Corporation.

Management Recommendations.

1. Several areas of significance at Dutch Harbor/Unalaska have already been noted (Thompson 1984c, Denfeld 1985): the Navy radio facility including the unique brick structure bearing evidence of the 1942 attack; the Navy aerology and air administration buildings; the bomb-proof power plant structure; the torpedo assembly complex (Bldgs 443, 444, 445 and 447); the battery facilities on Hill 400; and the battery facilities (Fort Schwatka) on Ulakta Head. Where this has not already been accomplished, these structures should be documented and evaluated for stabilization and/or restoration.
2. Additional sites of interest which should be evaluated and documented are battery sites at Eider Point (Fort Learnard) and Constantine Point (Fort Brumback).
3. The hangar, revetments and airfield should be evaluated and documented.
4. The modified ammunition magazines with blast walls on Mount Ballyhoo should be evaluated and documented, with a sample stabilized if appropriate. The turret-like reinforced concrete slab structures ("firewatchers station") should be evaluated and documented, with a sample stabilized if appropriate.
5. The ACS bomb-proof gallery should be evaluated, recorded and stabilized, if appropriate.

6. The location of the military cemetery site should be determined. If appropriate, it should be documented and marked.
7. A series of commemorative markers and/or interpretive displays should be erected at various locations at Dutch Harbor/Unalaska. A marker commemorating the Aleut and civilian removal should be erected in Unalaska Village, perhaps at the townhall or town park. A marker commemorating the Navy and submarine activities in particular would be appropriate for the location of the sub base (now the shopping plaza and Unisea Inn area). A commemorative marker should be erected in the vicinity of the bombed garrison site noting the June 3-4, 1942 attack. A self-guiding tour linking these points should be developed.
8. Attempts should be made through additional documentary research and field reconnaissance to map and record the "Iron Ring" defensive perimeter at Dutch Harbor/Unalaska.
9. Since Dutch Harbor is accessible via scheduled commercial air service, has a resident and, due to the fishing industry, a large transient population and played an important role in World War II, it would be an appropriate location for the development of a museum. Such a facility could deal with ecology, geology, history and prehistory of Unalaska and the Aleutians in general although the focus of the recommendation deals with World War II events. Interpretive displays and artifacts of the era could be displayed. A permanent display in the air terminal has been suggested. Another possibility would involve the utilization of an extant World War II structure.
10. Interpretive displays explaining defensive layouts should be installed at Ulakta Head and/or Hill 400.
11. In 1981, Veltre et al (1984) surveyed 19 archeological sites, visited 12 more and documented an additional 32 sites in the area of Dutch Harbor/Unalaska. Virtually all had been damaged by World War II or more recent activity. Further documentation work should be undertaken at these sites and those identified but not fully investigated by Veltre et al. (1987), as known area sites can be quite deep and the probability of significant stratified deposits remains despite the level of surface disturbance.
12. Except for the immediate area of private lands in the town of Unalaska, the entire affected area is owned by the Unalaska Corporation. The corporation should review all recommendations for specific action.

5.3.19 Excursion Inlet

Background. Following the attack on Pearl Harbor and Japanese advances throughout the Pacific, concern was expressed that the US could not logistically support its buildup and military operations in the northern Pacific. There were no ports or depots anywhere in Alaska capable of handling or storing the volumes of supplies and equipment envisioned for defense and/or potential offense in the theater. In March, 1942, Colonel Beverly Dunn of the

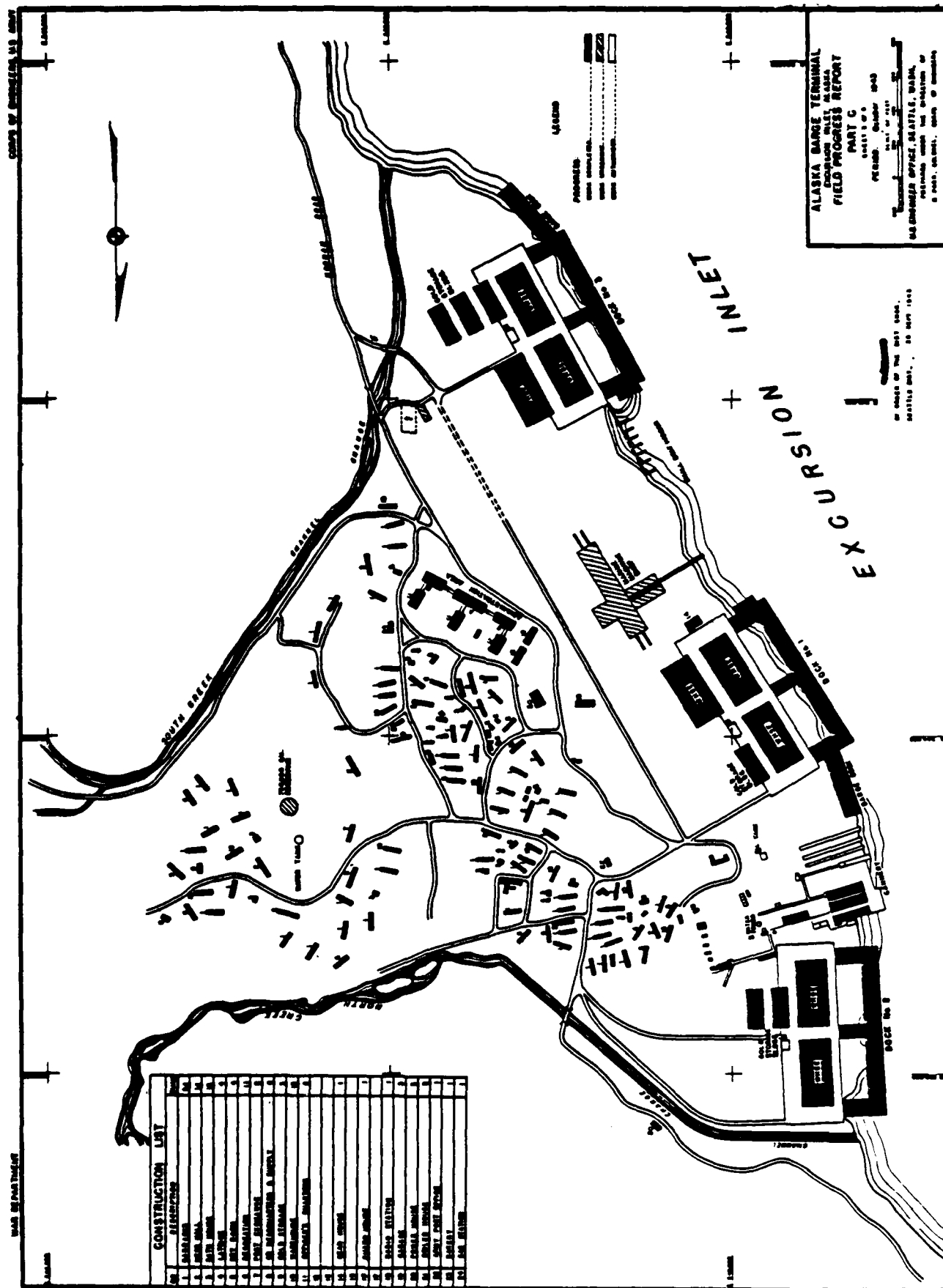


Figure 5-15. EXCURSION INLET

ACOE suggested that a port and depot facility be constructed at Cape Spencer across from the north end of Chichagof Island. Supplies could be barge-loaded at Seattle or Prince Rupert and sent via the secure Inland Passage to Cape Spencer, where they could be stored and transferred to ocean-going vessels for shipment to Seward, Kodiak, Dutch Harbor or other ports. This would require extra handlings, but would avoid potential enemy interdiction of an open sea route and allow more efficient use of scarce ocean-going bottoms by minimizing trip distance and turnaround time. Not only was this a more efficient plan for supplying the build-up in Alaska, but it also provided logistic support for a northern route invasion of Japan.

The project was relocated at Excursion Inlet in Icy Strait, a less exposed location than Cape Spencer, and authorized in late July, 1942, at about the same time the offensive move out the Aleutians was being planned. In August, 1942, a contract was signed with the Guy F. Atkinson Company to build the facility, which began in late August. The work started in earnest in October with a contingent of ACOE construction troops assisting. Excursion Inlet was the site of an abandoned, seasonal Indian fishing village and near the operating Astoria and Puget Sound Canning Company plant. The project was classified secret for security reasons. While locals were generally aware of it - after all, over 3600 contract and military personnel were employed in construction at the peak of effort, which included considerable blasting, in March, 1943 - there was censorship and a news blackout, so that the first general announcement of the facility's construction did not come until March, 1945. Dock facilities were the first priority item, with three ship docks 1000 x 100 ft. (two with barge facilities) capable of supporting nine ocean-going vessels being constructed. Timber was abundant locally and in addition to purchasing the output of local mills, the Army set up two small sawmills on site to provide lumber. More than one million cubic feet of rock was blasted, much of it to emplace the tank farm in a protected below-grade position. The skeleton facility was commissioned in March, 1943.

Over a 15-month period the massive facilities at the Alaska Barge Terminal or the Excursion Inlet Subport of Embarcation, as it was officially known, took shape, being essentially finished in November, 1943. The Japanese had been expelled from the northern Pacific sphere by August, 1943, and by mid-fall, the decision had been made to eschew any northern route invasion. With the threat to Alaska virtually nonexistent, what needs existed could be safely handled by a reduced number of cargo ships running directly across the Gulf of Alaska, eliminating the need for Excursion Inlet. The garrison was reduced in December, 1943, with subsequent transfers leaving the facility on a caretaker basis. In early 1945, the facility was declared surplus. The War Department ruled in May, 1945, that there was no suitable peacetime use or sufficient resale value for Excursion Inlet and decided to demolish it for salvage and to avoid maintenance costs.

In June, 1945, some 50 days after the surrender of Germany, 700 German POWs were transferred to Alaska to take down Excursion Inlet. These were noncommissioned officers and enlisted men, primarily from the North African campaign (Rommel's Afrika Korps). Beginning in July, they demolished the majority of facilities at Excursion Inlet. The work continued past the end of the War in the Pacific in August, with the last POWs being shipped out in January, 1946. Ironically, though most major posts had POW internment facilities ready, there were no more than 35 reported Japanese POWs captured during the Alaskan campaign, and these were quickly shipped to the mainland.

Stockade and brig population outnumbered enemy POWs until the arrival of German POWs after the war was over. There was criticism of the use of POW labor at the time since: 1) the war in Europe was already over when the decision to ship the Germans to Alaska was made; 2) though there was a program for using POW labor, including payment, there is no indication that the labor was compensated (though room and board were furnished at a reasonable level and the presence of a German-run post exchange argues for cash or perhaps a token economy); and 3) the war with Japan was winding down and there was the prospect of soon-to-be-discharged US troops in search of work. Governor Gruening had railed against the "wasteful" construction and demolition of an unused, multimillion dollar project, but, in fairness, the Excursion Inlet project represented prudent and reasonable planning. It would have served a need which was critical in 1942, had not the course of the war in the northern Pacific turned so rapidly. It also typifies the lead time necessary for major construction: without the press of wartime urgency, such a project easily could have taken twice as long. What was left of Excursion Inlet was transferred to the BLM in 1949.

Excursion Inlet is significant within the World War II in Alaska historic context under the Transportation/Logistics theme. No adequate port facilities existed to support military operations in Alaska in 1942. While the Excursion Inlet facility was never actually used as intended due to circumstances, it represented a state-of-the-art effort to supply Alaska. While engineering was straightforward, the rapidity of construction was noteworthy. In addition, the use of German POWs to demolish the facility in 1945 is of historic importance, representing the only presence of enemy POWs in Alaska.

Facilities Description. The three 1000 x 100 ft. ship docks were the focus of the facility, which also included two oil docks and a munitions loading dock at a separate, remote location. There were eight transit sheds, six cold storage buildings, four ordnance warehouses, a 1.5 million gallon tank farm (blasted out of bedrock), 530,000 square ft. of open storage at the main docks, housing, services, and utilities for a 3750 man garrison and port operating unit, hospital facilities, six power plants, and ship repair and other assorted shops. Most construction was of the T/O (frigid zone) type. All but 15 buildings, reservoir, dock and a cold storage warehouse were reportedly demolished by POW labor.

Present Conditions. In 1949, the remaining structures at Excursion Inlet were sold to a private contractor for removal, but he defaulted, and the facilities were transferred to the US Forest Service. In 1951, the Pacific American Fisheries company dismantled the main dock. Existing structures in the area have not been assessed as to whether they are of World War II provenance (Sverdrup-Excursion 1986).

Other Relevant Concerns. The site of Excursion Inlet is split among federal, state, borough and private ownership. The site abuts Glacier Bay National Monument on the west and Tongass National Forest on the east. The state of Alaska, Borough of Haines and the US Forest Service report no World War II material on their holdings. The Excursion Inlet Packing Company stated that it is using all structures and cannot attest to the origin of specific structures. No prehistoric archeological sites are recognized in the immediate area of Excursion Inlet.

Management Recommendations.

1. While an inventory report has been prepared for the Excursion Inlet site, its findings are inadequate to assess the integrity of World War II remains. Such a study should be undertaken and, if appropriate, significant remains documented. If no remains are located, Excursion Inlet should be dropped from the management preservation plan.
2. The aspects of importance at Excursion Inlet are the magnitude of the project and the demolition by German POWs (the largest presence of enemy POWs in Alaska). If an appropriate location can be found, a commemorative marker should be erected. An interpretive display, possibly at a southeastern site equipped for visitation (Glacier Bay National Monument visitor's center or Juneau), should be installed.

5.3.20 Forrester Island

Background. By 1940, the US Army Signal Corps had developed a servicable if limited aircraft warning radar, the SCR (Signal Corps Radio) 270 (mobile) and 271 (fixed) unit. Initial plans called for nine stations in Alaska, but surveys showed that such coverage would be inadequate given the effective operational ranges under Alaskan conditions, and a new plan involving 14 stations was proposed in January, 1941. This was expanded to 20 stations in October, 1941. None would be operational at the outbreak of the war. By January, 1942, due to other priority needs, the Alaska allotment of scarce radar sets was cut to 10 and in March to five. It was decided to allocate these sets to the three main Alaska bases: Sitka, Kodiak and Dutch Harbor.

"Due to the isolation of most detection sites, complete housing and utilities for the operating personnel of about 50 men were provided. Diesel generator power plants, cold storage buildings and other housing were furnished by the ACOE, while the steel detector building and antenna tower were supplied by the Signal Corps. All construction and erection was performed by the ACOE. In many cases the most difficult and costly construction was for landing facilities and access roads or tramway. Each station was planned for self sufficiency . . . The greatest difficulty encountered during the construction of detector stations was means of access (supply). In the majority of cases the sites were isolated from any direct means of travel except by water . . . In many cases no suitable beach was available; the only area suitable for landing operations was entirely exposed to the action of sea and wind. The urgency of high priority work at the several airfield installations often precluded the diverting of adequate floating equipment to supply the isolated AWS construction forces" (Bush 1944:218-219). The sites had to be located away from population and operations centers to avoid electronic interference. The original specifications for the SCR-270/271 series also required an unobstructed 360 degree sweep, calling for positioning on a high point. This required that site access roads be cut.

In March, 1941, an SCR-270 stations was authorized at Forrester Island near Annette Island. Construction began in spring, 1941, utilizing civilian labor under ACOE direction. The first task was the construction of a tramway and temporary lighter dock facilities to provide access to the site. Site preparation began, including the pouring of concrete foundation slabs. A small construction camp was also established. Lack of available supplies,

labor and a relatively low priority for the project slowed construction, and when the project was cancelled because of lack of available SCR units, little had been accomplished. The military did not develop the site, but held it until it was returned to the US Forest Service in 1946.

The Forrester Island AWS station is significant within the World War II in Alaska historic context under the Allied Military Operations, Communications and Cold Weather Adaptation/Engineering themes. The introduction of early warning radars represented an attempt to add technological capabilities to traditional defense installations. The installation of aircraft radars in Alaska represents one of the first uses of the technology by the US in an operational area (such radars had been in tactical use by the British, and were emplaced on the US mainland and at Pearl Harbor, but basically the US lacked sites in operational areas other than Alaska in early 1942). The communications capabilities were enhanced by radar monitoring. The ACOE, in charge of preparation of the sites and facilities, had, as indicated above, to overcome the difficulties of supply and shortage to construct the station. This involved the construction of a tramway to solve the engineering problems of access.

Facilities Description. Few specific details are available concerning the facilities at Forrester Island. An access tramway was constructed and a reported 21 structures erected before the project was cancelled.

Present Conditions. Reconnaissance by Sverdrup (SPAI-Forrester 1986) in 1985, revealed that concrete foundations are extant at the site, but reported no evidence of the tramway.

Other Relevant Concerns. No prehistoric or historic archeological sites are reported for the immediate vicinity of Forrester Island. The site is owned by the US Forest Service, and is part of the Alaska Maritime National Wildlife Refuge, with jurisdiction shared by USFWS and USFS.

Management Recommendations.

1. There are numerous AWS station sites located in Alaska, but only three were served by tramways. The Forrester Island AWS site should be surveyed to ascertain if the integrity of physical remains associated with World War II. If no remains are located, the Forrester Island site should be eliminated from the preservation management plan. If remains are identified, they should be evaluated for significance and documented. The feature of primary interest at the site is thought to be the access tramway, exemplifying the difficulties of installing and maintaining such isolated stations. If intact remains of the tramway are present they should be the subject of a Level I HABS/HAER recording project.
2. Since the land is part of Tongass National Forest and the Alaska Maritime National Wildlife Refuge, the US Forest Service and the USFWS may have an obligation to investigate the associated remains under Section 110 of NHPA.

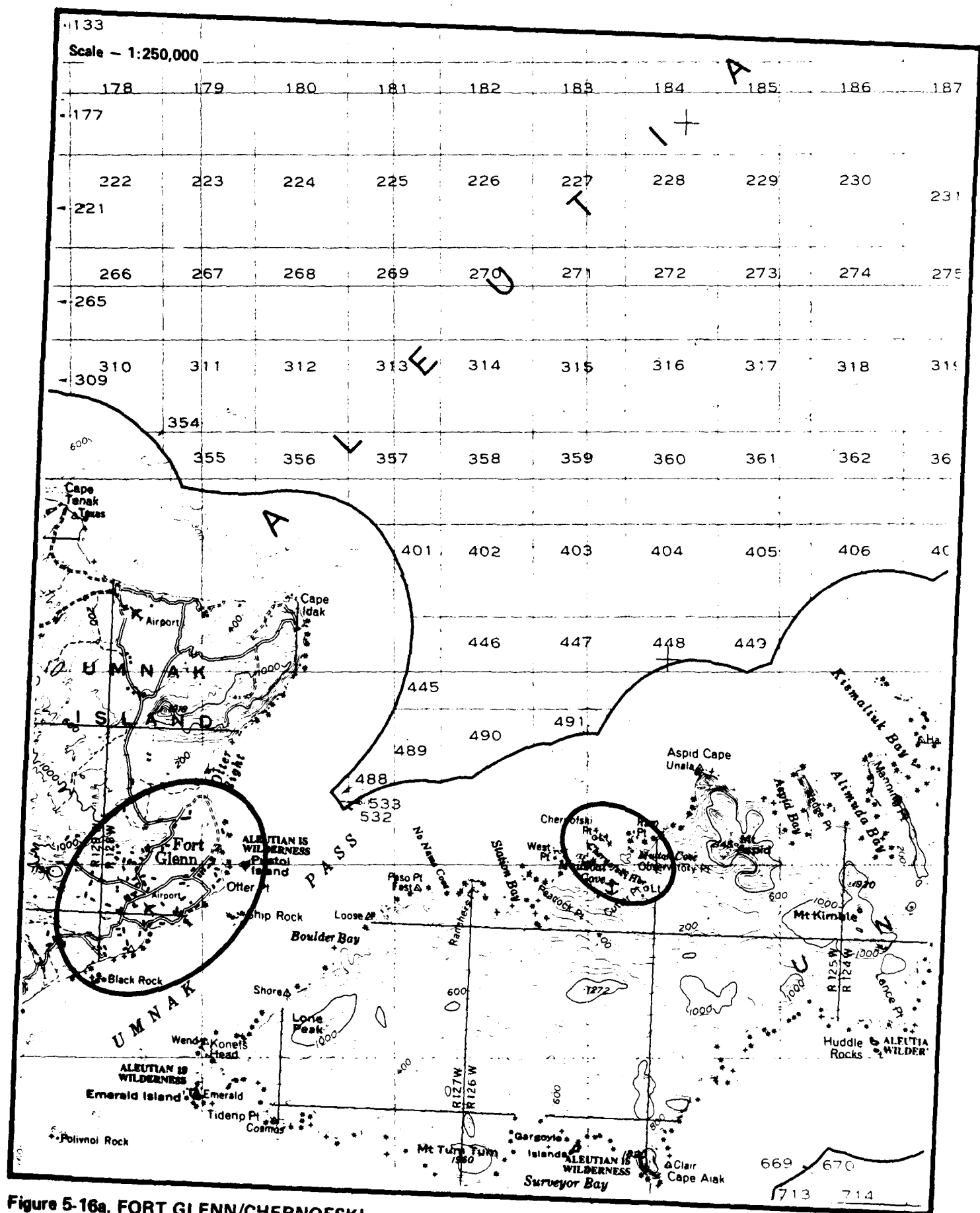
5.3.21 Fort Glenn/Chernofski

Background. In Fall, 1941, "it was decided to build airfields at Port Heiden, Cold Bay and on Umnak Island for the protection of the Navy base at Dutch Harbor against enemy attack, and for the defense of Alaska. During the Japanese attack on Dutch Harbor...June, 1942, the fighter and bomber planes from the newly constructed base on Umnak Island were instrumental in driving off the enemy" (Bush 1944:127). In May, 1941, General Buckner ordered a reconnaissance of the Aleutians to establish sites for air bases. Lieutenant Frank B. Miller of the Army Air Corps recommended Otter Point on Umnak. A reconnaissance in October-November, 1941, by Major Everett Davis and Major B. B. Talley confirmed the recommendation, and ordered more extensive ground survey, performed by civilian ACOE staff engineer William Muldrow. Generals Buckner and DeWitt supported the base against Navy objections that it was too far out to protect Dutch Harbor or to be supplied and protected itself. Major Talley hand-carried the proposal up the chain of command to Seattle, San Francisco and ultimately to Washington, D.C., where Army Chief of Staff General Marshall approved it after the attack on Pearl Harbor in December, 1941.

Shortly after, a B-17E was sent to patrol the Aleutian Chain from Umnak. Personnel operated under primitive conditions out of unwinterized Army pyramid tents and wall tents.

Though its main mission was to provide air protection for Dutch Harbor, the communications line between the two was unreliable so that when the Japanese bombed Dutch Harbor on June 3, 1942, the Otter Point fighters were not notified. Two Nakjima E7N "Dave" scout planes did stumble on Otter Point later in the day, one being shot down by P-40's after it strafed the facility without effect. On June 4th, the nine A6M Reizens and eleven Aichi D3A "Vals" from the carrier Junyo regrouped after their attack on Dutch Harbor over the field. P-40's scrambled, shooting down one A6M and three D3A's, with the loss of two P-40's. One crash-landed at Otter Point, with no injury to the pilot, while the other, piloted by Lieutenant John Cape, was lost after he had scored the kill on the Zero. The airfield was named Cape Field, and the facility itself designated Fort Glenn (after Captain Edwin F. Glenn, who made Gold Rush era reconnaissance of Alaska). The B-26's from Umnak participated in the ensuing fruitless search for the Japanese fleet. Still, while it cannot be credited with turning back a Japanese invasion of Dutch Harbor (such was never planned), the operational presence of Fort Glenn is credited with contributing to the Japanese abandonment of their planned operation at Adak for fear of the closeness to Otter Point's aircraft.

Soon after the Dutch Harbor incident, Fort Glenn was reinforced with B-17's, B-24's and P-38's, and participated as the main advanced staging and bomb-loading base for the "Kiska Blitz" attacks designed to drive the Japanese out of the Western Aleutians. The 54th Fighter Squadron was one of the first units to use P-38s in combat in World War II, and the squadron accounted for 14 out of 34 (40%) of all Japanese aircraft downed in aerial combat in the Aleutians. Also on July 13, 1942, the RCAF Number 111th Fighter Squadron with P-40's arrived at Fort Glenn, the first Canadian unit to serve in a combat role in Alaska. They were later joined by the RCAF Number 14 Fighter Squadron. However, except for P-38's, fighters had too short a range to serve in any but a local defensive capacity. The focus was on heavy bombers, and by August, 1942, Fort Glenn was home to three bomber squadrons. General Butler



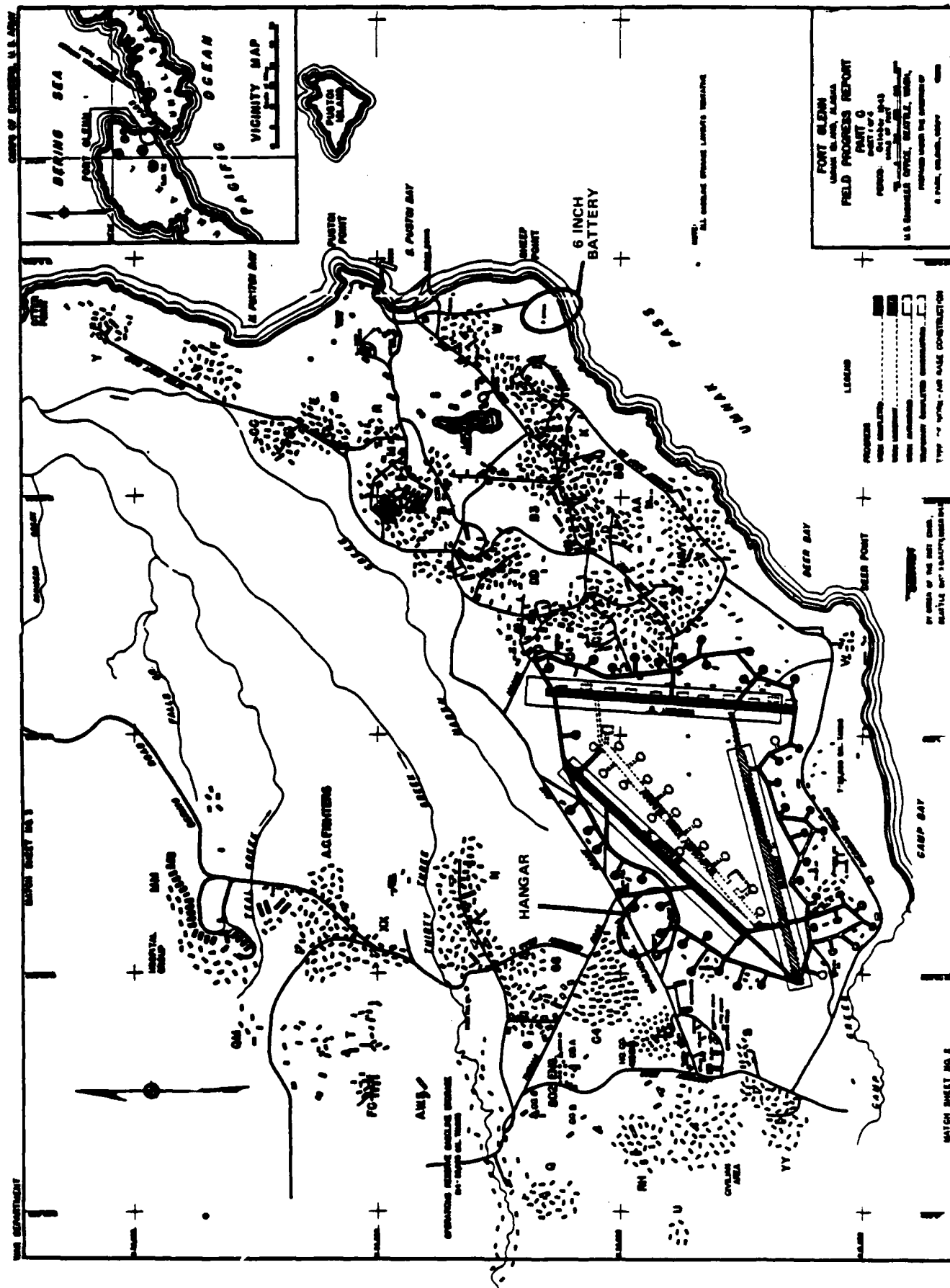


Figure 5-16b. FORT GLENN/CHERNOFSKI

moved the advance headquarters of the Eleventh Air Force to Umnak on July 20, 1942, and it is reported (ACOE 1977:83) that General Buckner, the ADC commander, maintained a residence at Fort Glenn as well during this period. The "Umnak Dispersal," the occupation of Adak, occurred on August 30, 1942, taking the war to the Japanese. The success in the rapid construction of the airstrip at Sweeper Cove on Adak meant that operations could be advanced there, and Eleventh Air Force headquarters were moved from Fort Glenn to Adak on September 13, 1942. The last combat mission was flown out of Fort Glenn the same day, and it subsequently became just another staging field.

Fort Glenn was only operational as the forward base for US air operations for a period of three-and-a-half months, though they were the most crucial three-and-a-half months in the Northern Pacific campaign.

For his role in spearheading the development of the air base, Colonel Talley was awarded the Distinguished Service Medal in 1943 at the suggestion of US Army Chief of Staff George Marshall. Fort Glenn, while it continued to have facilities added (the high point in construction personnel was reached at over 1300 in September, 1943), was essentially bypassed except for rear echelon service personnel. Even the guns were removed to locations further West. Operations tapered off rapidly towards the end of World War II, with only communications, service, and caretaker personnel assigned after 1943, and even more rapidly after VJ Day, though the base was not officially inactivated until January, 1950.

Facilities Description. The original plans for Fort Glenn called for the construction of air facilities including three runways with hardstands, taxiways and revetments, aviation gasoline storage and ordnance storage to support a fighter and a bomber squadron. Other facilities planned were antiaircraft, field artillery, infantry, engineer and civilian construction housing, service facilities and utilities, plus medical and technical facilities to support a total garrison of about 2,600. The first runway, surfaced with pierced steel planking, was 5000 x 100 ft. Additional units and facilities were added so that the garrison was four times as large as originally anticipated by December, 1942 (Photo 5-3). The final staffing level was 10,600 plus medical and civilian construction personnel. In addition to the initial runway (Photo 5-4), three more runways were constructed: A (NE-SW), B (N-S) and C (E-W); A and C bracket the original runway. The new runways were surfaced with volcanic ash quarried about six miles north along a road (Bering Road) leading to Satellite Airfield No. 1 (Berry Field), located between Cape Idak and Cape Tanak. These dispersal fields (Satellite Airfield No. 2 was planned about six miles to the SW between Kettle Cape and Black Rock) were to have three runways 6000 ft long. In 1943, Berry Field was extended to 7500 ft. Storage was built for 2.1 million gallons of aviation gasoline, 1.0 million gallons of gasoline and 1.68 million gallons of diesel fuel. Warehouse space of 204,898 square feet was authorized, with the authorization being increased in 1943. Cold storage facilities, shops, a barge dock, tanker mooring facility and an electrical and water system were installed. A SCR-271 radar tower installation was installed to the northwest at Cape Tanak (10/43) and to the southwest at Kettle Cape (3/44), with an SCR-296 surface craft detector station to the northeast at Cape Idak (7/43). Fort Glenn ACS personnel were also responsible for installing SCR-271 units at Cape Prominence (south shore, Unalaska) and Nikolski (southwest tip, Umnak). To solve the communication problem between Fort Glenn and Dutch Harbor, a submarine cable was laid from Fort Glenn to Chernofski in July, 1942. It was replaced and upgraded in May,

Photo 5-3

Fort Glenn (July 1942)

Source: USAF Photographic Collection, National Air
and Space Museum, Smithsonian Institution.



Photo 5-4

Fort Glenn Runways (July 1942)

Source: USAF Photographic Collection, National Air
and Space Museum, Smithsonian Institution.



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1943. The main ACS facility was moved three miles north to Magazine Ridge in Summer, 1942. The ACS also operated the AACS (Army Airways Control System) at Fort Glenn.

Hospital facilities were expanded to the north of the main airfield area, as were airmen's facilities. No hangar facilities were originally noted as planned for Fort Glenn, however, in 1944, a Birchwood Hangar was constructed north of Runway A. ACOE (1977:62, Figure 20) incorrectly identifies this as a Kodiak hangar. Repair and machine shops were also developed at Fort Glenn.

Chernofski - The port facilities at Chernofski (Mutton Cove) consisted of housing, warehousing and cold storage to service Fort Glenn. A total of eight docks (two ship docks) were constructed and one bargeway. A water supply system with dams and conduits (and hydrants for fire protection) was also installed. A Navy submarine net depot was maintained at the entrance to the inner harbor.

Present Conditions. ACOE (1977:306) defines six cleanup areas for Fort Glenn. Area No. 1 runs along the east and south coast of Umnak from Otter Point to Pustoi Point and Sheep Point to Deer Point. From Deer Point, it runs north along Runway B to Grant Ave, then east, south of Marsh Creek to Otter Point, forming a rough parallelogram. This area includes dock, coastal artillery, Navy and general housing facilities.

Area No. 2 is located to the west of Area No. 1, including the main airfield area, the civilian construction camp, engineers' area, post headquarters area and the structures to the south of Camp Creek to a point near Black Rock. Area No. 3 is found to the west of Area No. 2 and includes a low density of structures.

Area No. 4 lies to the north of the main area and includes the hospital and Air Corps areas. Area No. 5 lies between Area No. 4 on the north and Areas Nos. 2 and 3 on the south, and includes the main warehouse area south of Thirty-Three Creek. Area No. 6 is the cluster of structures found to the northeast along Reindeer Creek where Bering Road takes a sharp bend to the north towards the quarry, Satellite Airfield No. 1 and the Tanak and Idak AWS stations. The Satellite Airfields and AWS stations are not included in the cleanup as presently defined for Fort Glenn though the vast majority of World War II remains are included.

ACOE (1977:32-34) notes a high density of remains at Fort Glenn, which was confirmed (though not inventoried) by Envirosphere in July, 1985. The ACOE inventoried 1245 Quonset/Pacific hut type structures and 601 wood-frame structures, ranging up to greater than 10,000 square feet and two stories (though 75% are less than 5000 square feet). In addition, there are 49 recorded concrete/reinforced concrete foundation slabs and 153 revetments, indicating structures, 58 munitions storage bunkers, 30 storage tanks, one Birchwood hangar, two docks, one defense fire control bunker, nine gun emplacements (360° Panama mounts are mentioned, though a 6-inch gun was emplaced at Fort Glenn as well), 769 utility poles and miscellaneous debris. In addition, the water system is still in place (including hydrants), as are the landing lights (Bartow system?) along Runway A. Boilers (with asbestos insulation) are present in the power house adjacent to the hangar, and there is miscellaneous equipment and debris, including a forklift and landing light globes in crates marked for shipment via Fort Richardson in the hangar. Cohen

(1981:232-233) illustrates abandoned trucks at Fort Glenn. An unidentified downed two-engine aircraft is also located at the east end of Runway A (incorrectly identified as a B-24 by USFWS 1985). Fort Glenn, due to its relative inaccessibility and magnitude, plus its maintenance up to 1950, is relatively intact. Though much of the facility is in a state of decay, its structures are generally standing as opposed to those at many other installations. Its runways are still serviceable, though weather hampers fixed wing access and rotary-wing access is often difficult as well.

Chernofski - A 1985 Woodward-Clyde inventory of Chernofski recorded a total of 49 hut-type structures, 36 frame structures, 65 revetments, nine concrete slab foundations, 27 storage tanks, eight docks, one vehicle, one 6 inch gun (the site of the emplacement is unidentified), one bargeway, and miscellaneous debris including submarine netting, barbed wire, lumber, a coal pile, utility poles and POL drums.

Other Relevant Concerns. Archeological sites are recorded at Cape Tanak, and Cape Idak (site of AWS stations), at Otter Point, Pustoi Point and at Deer Point (within the cleanup area), and on Pustoi Island and Ship Rock in Umnak Pass (ACOE 1977:183; DEIS 1979:J-95, J-119). The nature and condition of these sites is not known. All are essentially coastal in nature. A sheep and cattle station has been maintained at Fort Glenn in recent years, though it is currently inactive, and Umnak boasts a reindeer herd. An additional issue includes the possible stationing and testing of tanks at Fort Glenn. Cohen (1981:121) illustrates two light, two-man treaded vehicles with forward mounted small turrets with cannon, in maneuvers at a site identified as Umnak. These are identified as the Provisional Tank Company of the 138th Infantry Regiment, with the date given as 1942, and the note that armor was generally unsuited for use in the Aleutians because of tundra conditions. Infantry troops were present at Fort Glenn in 1942 to protect it against possible invasion, though the use of and potential remains of tanks needs to be confirmed. ACOE (1977:323) Figure 118, illustrates a mess hall at Cold Bay with the legend "1st Provisional Tank Co. (fictitious)". Helbock (1977:96) states that a 1st Provisional Tank Company was stationed at Cold Bay, and that the 138th Infantry was stationed at Fort Glenn in 1943-1943 (1977:107). ACOE (1977:82-83) also notes the presence of two paintings attributed to Private Carl Ennis in 1943, depicting service life and attitudes, and reports a residence used by General Buckner, ADC Commander. Informants in Unalaska stated that pool tables were present in an officers' club Quonset in the Air Force sector, though furnishings were not observed in July, 1985. There also remains the possibility of the existence of live ordnance, since Fort Glenn was an ordnance loading and storage area.

Chernofski - The eastern portion of Mutton Cove is reportedly owned by Milton Holmes, Chernofski Sheep Ranch, who desires that most of the site remain as is, since he uses it in his operations. The remainder is owned by the Tanadgusix Corporation. The 1985 Woodward-Clyde team noted no archeological remains, however, McCartney (1972) notes three sites in the area (US 9, 10, 11). There are also reports of a Russian Orthodox church at Chernofski, though it has not been located or identified. EnviroSphere personnel noted a feature at the head of Mutton Cove which appears to be a seaplane ramp facility, though no documentation has been noted and Woodward-Clyde identified it as a dock.

Management Recommendations.

1. A detailed inventory of structures and facilities at Fort Glenn and Chernofski and their current state should be undertaken if data collected by the ACOE in connection with DERA (see Section 6.0) is not adequate or suitable for preservation planning needs. The NPS and SHPO should immediately consult with the ACOE to ensure that the level of effort in the final design analysis funded by the ACOE, if undertaken, is consistent with preservation planning needs.
2. The NPS and SHPO should proceed with the nomination of Fort Glenn/Chernofski to the National Register independent of the thematic nomination recommended in Section 5.2.3 if this can be done faster than the thematic nomination. This is recommended to afford the site some protection as quickly as possible.
3. The NPS and SHPO should, in accordance with Section 41.35.030 of the Alaska Historic Preservation Act, encourage the state Historic Site Advisory Committee to recommend to the Office of the Governor that Fort Glenn be designated a State Monument. The majority of the property at Fort Glenn is believed to be under Alaska state ownership. Prior to the nomination process, a real property analysis should be undertaken to determine ownership status and ascertain if any private parcels are involved.
4. If private land ownership of parcels integral to the site of Fort Glenn are identified, written consent for inclusion of such lands within a State Monument should be obtained and the feasibility of acquiring title to such lands should be evaluated.
5. The existing Birchwood hangar at Fort Glenn is symbolic of the scale of activity at the base. The structure is currently in a deteriorated condition. An evaluation by a structural engineer should be undertaken to determine if it presents an immediate hazard if such an evaluation has not already been done by the ACOE as part of DERA. Stabilization should be undertaken if feasible.
6. A representative sample of structural types at Fort Glenn should be selected and stabilized and the suitability of restoration be evaluated.
7. Interior furnishings and personal effects identified in structures at Fort Glenn which are portable and/or subject to vandalism should be retrieved, treated according to appropriate conservation measures and stored until such time as they can be used for interpretive purposes. These would include such items as paintings by private Carl Ennis, the barber chair reported in ACOE (1977:82-23) and the pool table reported to be present. Items which cannot be removed because of present fragile condition should be recorded in situ.

8. A commemorative marker should be established in the vicinity of the initial temporary runway, noting its historic combat role and its engineering significance as one of the first operational use of pierced steel plank runway surfacing.
9. A series of self-guided trails should be designed and installed with points on the trails identifying types and function of structures and structure groupings and general and specific information on the history of Fort Glenn. A brochure identifying trails should be prepared and made available to the general public. The feasibility of establishing a permanent interpretive display at Fort Glenn should be evaluated.
10. The feasibility of granting concession rights to private vendors for tour operations to Fort Glenn should be evaluated and if feasible, a concessionaire selected. Concession revenues should be dedicated to implementation of preservation planning needs at Fort Glenn.
11. Portions of Fort Glenn under state ownership should be posted with signs prohibiting collection or disturbance of any materials at the site.
12. Existing vehicles and downed aircraft at Fort Glenn should be individually evaluated in accordance with procedures identified in Appendices D and F.

5.3.22 Fort Richardson/Elmendorf Field

Background. Early plans (1935) called for air bases to be built in Alaska, with the first being scheduled for Fairbanks at the interior population center. By 1939, planners had changed the focus to a coastal air base for operations and to serve as a supply and control hub for a series of bases envisioned in coastal locations. The outbreak of the war in Europe led to the establishment of a major base at Anchorage as a priority item. Anchorage was chosen because it was the main coastal population center, was accessible by boat part of the year and by rail year-round, had available flat land for construction of air base facilities, and was centrally located. Funding was requested for fiscal 1941, deleted, then restored as the war in Europe heated up again in spring, 1940. Construction began in June, 1940.

A reservation of 43,495 a. was withdrawn, and local workers were hired to prepare the site across Ship Creek from Anchorage. Available local labor was soon exhausted, as were local facilities and supplies. By October, 1940, a labor force of over 2000, mostly under contract to Bechtel-McCone-Parsons, was at work. Several projects were begun simultaneously - the east-west runway, housing and a rail spur from the Alaska Railroad yards - and continued on a restricted basis over the winter. The first troops associated with the buildup, a contingent of 780, had arrived in June and were assisting with construction (to the ire of local unions) and living in tents until the winter. In July, 1940, Colonel Simon B. Buckner, Jr., was assigned to command

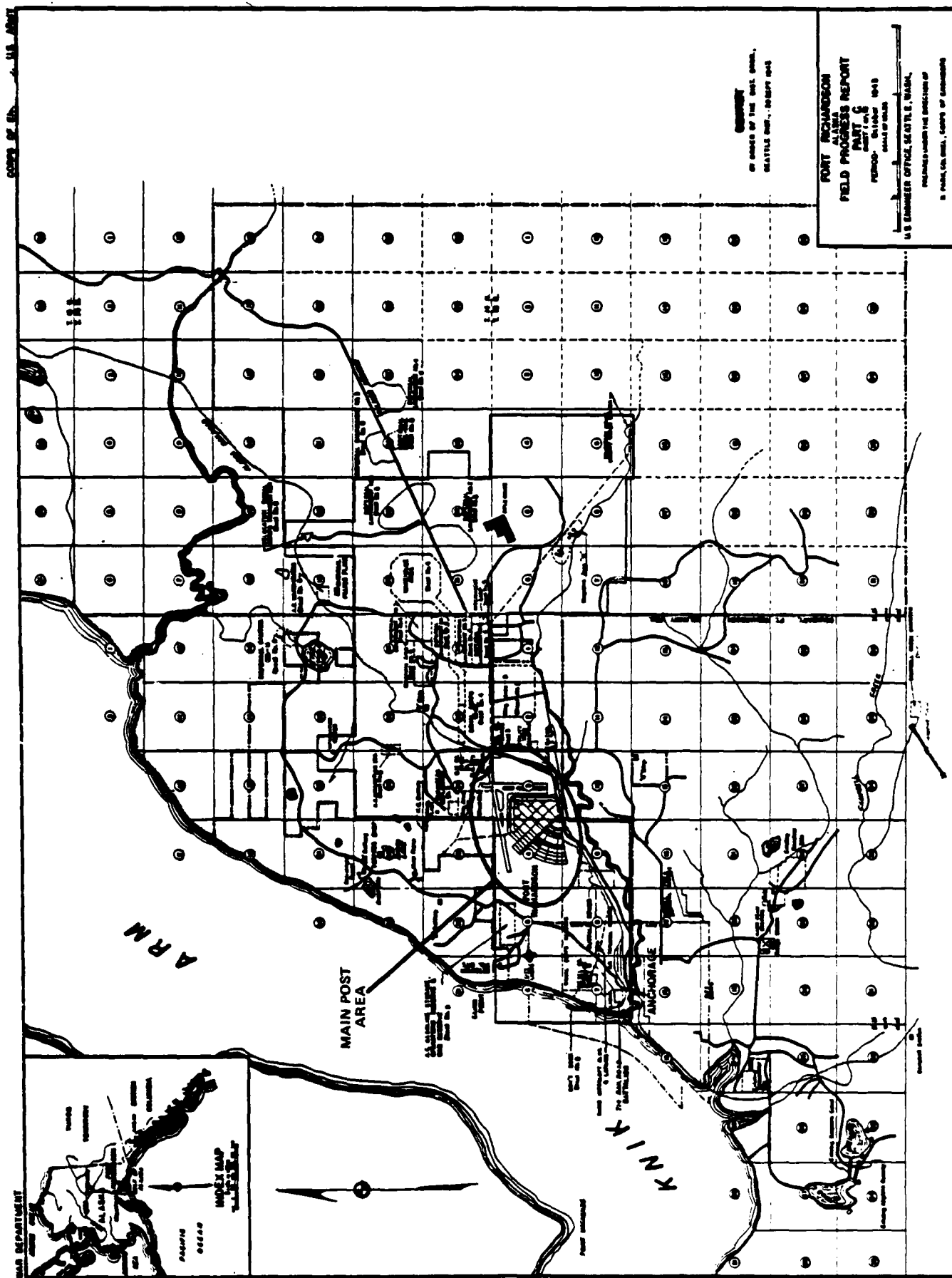


Figure 5-17. FORT RICHARDSON/ELMENDORF FIELD

Alaska, and began pushing for more rapid development. The first runway at the facility was ready for aircraft by the end of November, 1940. The first military aircraft assigned consisted of 20 crated P-36s, arriving in February, 1941, which were augmented by B-18A bombers. The Army Air Corps facility was christened Elmendorf Field (after Captain Hugh M. Elmendorf, killed in a test flight accident in 1933), while the overall base was designated Fort Richardson (after Brigadier General Wilds P. Richardson, former head of the Alaska Road Commission) in December, 1940.

Quite a few problems of an administrative nature were experienced during construction. Construction authority was switched from the Quartermaster Corps to the ACOE in January, 1941. All construction was to be on pre-war standard plans. Given labor and supply problems, the requisite construction could not be completed as designed within budget, leaving workers idle while the local engineers tried to obtain authority for alterations from the District Office. Standard designs also called for the construction and placement of water towers in a potentially hazardous location near the runway approaches. The situation was complicated further by requests from the post commander for additional facilities changes and frequent labor unrest over wages, working conditions and the use of troop labor to expedite construction. Nevertheless, facilities development proceeded more or less on schedule. In March, 1941, the Alaska Defense Command, headquartered at Fort Richardson, was formed, and by the end of the year two 5000 ft. runways, three hangars and housing had been completed. The facility still lacked effective aircraft to fulfill its primary mission.

Once tactical operations began in Spring, 1942, it became clear that the war would be fought in the Aleutians, and that Fort Richardson was too far away from the action to play a combat role. It was largely stripped of aircraft, equipment and personnel to fuel the war effort elsewhere, though it served as a major supply depot. Nominally the headquarters of the ADC and the 11th Air Force, Fort Richardson lost the commanders and key staff of both first to Kodiak and later to Adak. Despite its rear echelon role, Fort Richardson continued to expand throughout the war, with new construction being undertaken into 1944. Elmendorf Field was the only air base besides Ladd Field east of Adak kept on active status after the stand-down ordered in December, 1943. Ultimately, the facility could serve 15,000 personnel.

Fort Richardson was one of the few bases retained in service after the close of the war, serving as the headquarters of the Army in Alaska in the post-war era. In 1950, the Army ceded the Elmendorf facilities to the USAF, and constructed new facilities adjacent to the existing base. The new Fort Richardson and the old Elmendorf AFB continue as active military facilities.

Fort Richardson/Elmendorf Field is significant within the World War II in Alaska historic context within the Allied Military Operations theme. It was the first air facility built in Alaska with a combat role in mind. Though it never operated in a combat role, it served as headquarters and staging area for operations in Alaska under the "time-center" central basing strategy initially designed for the World War II defense of Alaska. Under the Transportation/Logistics theme, Fort Richardson was a major depot, supply and transshipment point for military logistics in Alaska in World War II.

Facilities Description. The east-west 7500 ft. and 5000 ft. north-south concrete-surfaced runways were the core of the facility. Aprons, taxiways, 39 revetments and one temporary and three permanent base hangars (270 x 270 ft.) were also constructed. In 1942, four 5000 ft. satellite dispersion airfields were constructed at Wasilla, Goose Bay, Birchwood and Campbell. A dispersion field was begun at Palmer, but construction was halted in May, 1942. The CAA also upgraded facilities at Merrill Field for backup military use. Fuel (aviation gasoline) storage with a total of 2.15 million gallons capacity, including an aqua distribution system, and utilities (6000 kW central heating/power plant, bomb-proof communications building, 7 million gallon/day water system, water-borne sewage system, roads, 13.4 mi. railroad spur) were constructed, as were concrete ordnance igloos and harbor (dock) facilities. Housing for 15,000 troops and 900 civilian personnel (mostly using pre-war mobilization barracks construction) and hospital units with a total of 700 beds were built, as were shops, storage and technical and administrative facilities. Dispersal cantonments and a POW camp, consisting of winterized tents, were built. Coast defense facilities were never authorized at Fort Richardson, but antiaircraft emplacements were installed, as was a mobile SCR-270 AWS radar unit at a temporary location on Loop Road.

Present Conditions. Elmendorf AFB and Fort Richardson are active military installations. While many World War II era structures remain in use, base development over the last 40 years has significantly altered the character of the World War II facility.

Other Relevant Concerns. No prehistoric or historic archeological sites are reported in the immediate vicinity of the World War II era facilities, and extensive alteration during construction makes it unlikely that such remains exist intact in the main base area. A specific item of interest is the Kashim. Built as a Service Men's Club by Special Services officer, Major Marvin Marston of ATG/Eskimo Scout fame, reportedly using funds from the operation of slot machines, it is currently used as the Family Support Center, Elmendorf AFB. ACS Communications facilities and Building 5-504, used as the residence of the Alaska Air Command senior officers, also represent specific structures which are known to exist on the base. One of the first operational radar units in Alaska was also initially emplaced at Fort Richardson on Loop Road. Ownership of the facilities is military.

Management Recommendations.

1. On the original Fort Richardson, now Elmendorf AFB, the airfield, with its associated hardstands, taxiways, revetments and hangars, represents the first military operating base built in Alaska. It should be assessed to determine if the original World War II configuration is extant. If so, it should be documented and marked.
2. The headquarters building, 11th Air Force (now the HQ, 21st Tactical Fighter Wing and 21st Combat Support Group) should be marked.
3. The headquarters of the Alaska Defense Command should be identified, assessed, and documented if extant remains are present. A commemorative marker should be erected.

4. The Kashim, evaluated (currently the Family Support Center) should be documented, evaluated and marked. This was associated with Major Marvin "Muktuk" Marston, Special Services officer and later associated with the ATG.
5. Attempts should be made to locate the site of the SCR-270 AWS emplacement on Loop Road. As one of the first operational aircraft warning radars in Alaska in World War II, this location is significant under the Allied Military Operations theme.
6. Interpretive displays and perhaps a museum should be established to commemorate the role of Fort Richardson as Elmendorf Field in World War II.

5.3.23 Funter Bay

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At this time the evacuation of all civilian personnel, especially native, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

The SS Delarof (USAT), which had evacuated the Pribilof Islands, stopped at Unalaska to pick up the refugees from Atka before heading for the southeast. At the time the ship sailed, with 477 Aleuts from the Pribilofs and 22 USFWS employees plus 83 Aleuts and two BIA personnel from Atka, the authorities were still uncertain where to land the evacuees. Sites on the Kenai Peninsula and in Washington State were proposed before it was decided to locate them in the southeast near the Juneau Indian Service office. It was reported that the USFWS employees panicked on ship, exacerbating the difficulties. A destination was not determined until June 23, one day before the Delarof docked. The Pribilof Aleuts were to be housed at two facilities at Funter Bay on the northern tip of Admiralty Island, while the Atkans went to Killisnoo. The natives from St. George were housed at the abandoned camp of the Admiralty Alaska Gold Mining Company, while the St. Paul people were to stay at the abandoned Funter Bay Cannery. While the facilities were in a poor state of repair and there were problems of supply (the Aleuts became responsible for repairing their own quarters and preparing their food communally), the Pribilof Islanders had been allowed to take a substantial amount of personal property. Morgan (1980) mentions that "washing machines" were brought, and Stein (1982) notes the presence of boats and motors. Ellsworth (1952) gives a dramatic account of non-essentials being thrown overboard by military personnel, but other authorities deny that this was the case for the Pribilof evacuees. The Atkans had been burned out and so could take virtually nothing, and the belongings of the Unalaska natives were reportedly searched to allow only clothing.

The first winter was reportedly much harsher than those normally experienced in the Aleutians, and there was a high mortality rate, especially among older people. Outbreaks of influenza, pneumonia and measles were noted and tuberculosis was common (though these maladies were also common in the Aleutians). There was a fairly frequent lack of heat due to equipment failure. However, records (RG 22, NARA-Seattle) note that there were frequent

visits to Juneau for work, shopping, visiting and medical care. Aleuts obtained work involving boat repair at Excursion Inlet and at Sitka canneries. Once employment had been found, the BIA began to charge the Aleuts for subsistence and supplies, which led to discord. Subsistence hunting and fishing was prevalent. Facilities were improved gradually. Quonset huts were delivered in late 1943, and most families were able to live as separate units after the initial shuffle to prepare facilities. Some household spaces were formed by stringing blanket partitions to make separate "rooms." There are reports of Aleuts enlisting and being drafted into the armed forces from the southeast camps. Still, when polled, the majority reportedly expressed a preference for staying at Funter Bay.

Besides obtaining local wage employment, adult males were returned to Pribilofs between May, 1943, and November, 1943, for the seal harvest, although they refused to stay for the winter trapping season and were returned to Funter Bay. The Pribilof Aleuts were the first to be repatriated, returning to St. George and St. Paul from Funter Bay in time for the seal harvest in May, 1944. The USFWS resumed jurisdiction upon the return (USFWS personnel had been dismissed upon arrival at Funter Bay, and the Pribilofs placed under BIA jurisdiction). Funter Bay was returned to its owners after the natives left.

The relocation at Funter Bay is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel, except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one eighth native blood were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from which they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect, and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by US executive order as potential enemies at about the same time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuations at Nunivak, St. Lawrence and other areas were cancelled.

Facilities Description. No detailed information is available concerning the nature of the facilities at Funter Bay during the relocation occupation.

Present Conditions. No information is available concerning the current state of facilities at Funter Bay.

Other Relevant Concerns. No prehistoric or historic archeological sites are recognized in the immediate area of Funter Bay, which is located in the Tongass National Forest.

Management Recommendations.

1. Funter Bay is one of four Aleut relocation sites. A reconnaissance survey should be made to locate identify and evaluate the integrity of World War II era remains at the site. If no significant remains are located, Funter Bay should be dropped from the preservation management plan. If significant remains associated with the relocation camp facilities are located, Funter Bay should be documented, the remains evaluated for stabilization and the site nominated to the National Register. A commemorative marker should be placed at the site. Since Funter Bay is part of Tongass National Forest, the USFS may have Section 110 responsibilities as regards any cultural remains at the site.

5.3.24 Galena

Background. During August, 1940, the CAA was asked to survey airfields with military use in mind. By late 1941, sites were selected, plans drawn up and construction begun at 11 sites, mostly in the interior, including Galena on the Yukon River. The original site selected was some miles east at West Ruby. Construction was begun, but the site, selected in winter while the area was still frozen and snow-covered, turned out to be boggy and unsuitable, and was abandoned in late 1941. The new site was finished in spring, 1942.

In July, 1941, negotiations began with the USSR over Lend Lease transfer. The North Atlantic ocean route was subject to submarine interdiction and the South Atlantic route involved a 13,000 mi. trip through South America, Africa and Iran. The US proposed a route across Alaska to Siberia. The Soviets resisted since they did not have adequate Siberian bases to handle the proposed volume, did not want Allied personnel in Siberia, and feared that the route would provoke the Japanese. However, the relative ease of transfer led to a agreement to establish the Alaska-Siberian, or ALSIB, route. The ATC established its headquarters at Great Falls, MT, and the first Lend Lease aircraft was turned over in August, 1942. A total of almost 8000 aircraft were transferred over the route between 1942 and 1945. The ATC simultaneously followed the route with flights to resupply interior Alaska.

To support these activities, the original CAA airfield was expanded and garrison facilities were constructed beginning in September, 1942. Construction was slow due to problems of high-latitude cold weather engineering and supply. The only route for equipment and supplies was by river. Shipments were made to the river port of Nenana via the Alaska Railroad, then loaded on barges and one of two small river steamers, and floated down the Nenana and Yukon Rivers 366 mi. to Galena. This route was only usable for a short period during the summer.

Facilities were expanded in 1943 to handle the increased traffic on the ALSIB route. Aircraft were formally turned over to the Soviets at Ladd Field and there was no Russian liaison office at Galena, but its location midway between Ladd and Nome made it an important stopover and refueling point on the route. Galena became part of the ATC in late 1943. Galena was also the only developed base in this sector of Alaska. Though the military base at Galena was closed in 1945, its strategic location led to its reestablishment as Galena AFS, a forward operating base for tactical fighter aircraft in 1951. It is still an active base.

Galena is significant within the World War II in Alaska historic context under the Lend Lease theme. As one of the few sites associated with the transfer of military aircraft to the USSR, it participated in a program which provided crucial military aid to an ally. The program was to some extent responsible for keeping the USSR in the war and contributed to the defeat of the Axis powers. The function of Galena as a sector base is also noteworthy under the Transportation/Logistics theme for its supply of subsidiary interior stations and because of the problems of supplying it via river and to a lesser extent air routes, exemplifying the importance of the role of supply to the development of Alaska.

Facilities Description. The original construction program provided housing, services and utilities for a garrison of 340 using T/O (frigid zone), Quonset and Pacific Hut and Yakutat Hut structures. Located in the bend of the Yukon River, the airstrip was oriented east-west and was 7500 x 300 ft. (the final dimensions as of November, 1943). CAA facilities were located to the south between the runway and the riverbank, and the existing village of Galena was located to the east of the CAA facilities and south of the runway. The construction camp, barracks and hospital area were located northwest of the airstrip. A 200 x 202 ft./150 ft. bowstring truss (Birchwood) hangar was built in 1944 north of the runway near motor shop and warehouse facilities. Fuel storage was near the CAA area to the south. A northwest-southeast secondary runway was commissioned in 1943, and the contract let to Summers Construction Company, but was never completed.

Present Conditions. No detailed information is available concerning the current status of World War II period facilities at Galena, however its use as a fighter base since 1951 has entailed an upgrading of facilities. The Birchwood hangar is still in use, the runway has been expanded, and a dike has been built to protect the base from flooding by the Yukon River. Other base facilities have been replaced to an undetermined extent.

Other Relevant Concerns. There are no prehistoric or historic archeological sites recognized in the immediate area of Galena. The extensive changes involved in preparing the facilities for contemporary use means that World War II facilities have probably been altered or obscured. Galena is also an active military facility with a tactical defense mission.

Management Recommendations.

1. Field reconnaissance should be undertaken to assess the integrity of World War II era remains at Galena. If such remains are located, they should be documented and evaluated for eligibility to the National Register. If no significant remains are located, Galena should be removed from the preservation management plan. The features of particular interest at Galena include the airfield and associated hardstands, taxiways, revetments and hangars, because of the association with Lend Lease and the CAA construction camp. A commemorative marker and/or an interpretive display should be erected in an appropriate location.

5.3.25 Kashega

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At this time the evacuation of all civilian personnel, especially native, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

In early July, 1942, the residents of Kashega, a small fishing village on the north shore of Unalaska Island, were rounded up and placed aboard the S.S. Columbia along with Aleuts and BIA personnel from Akutan, Nikolski, Biorka and Makushin Villages. These people were landed at Wrangell Institute in southeast Alaska on July 13, 1942, and transferred to an abandoned CCC camp at Ward Lake, near Ketchikan on July 17, 1942. The Kashega residents eventually joined the Unalaska evacuees at the camp at Burnett Inlet, though Ward Lake was occupied by refugees until August, 1944, when it was turned over to the Army which in turn briefly used it as a camp before returning it to National Forest Service jurisdiction on October, 1944.

The Kashega residents were repatriated to the Aleutians in May, 1945, where they eventually dispersed to settle at Unalaska. Attempts were made to resettle Kashega, but a lack of support and jobs eventually resulted in its abandonment. It is currently used, infrequently, as a camp on a seasonal basis.

The removal site of Kashega is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel, except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one eighth native blood except those directly employed by the military were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by U.S. executive order as potential enemies at about the same time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuation at Nunivak, St. Lawrence and other areas were cancelled.

Facilities Description. No information is known to exist concerning the nature of the facilities at Kashega at the time of the evacuation in 1942.

Present Conditions. No information is available concerning the current status of facilities at Kashega.

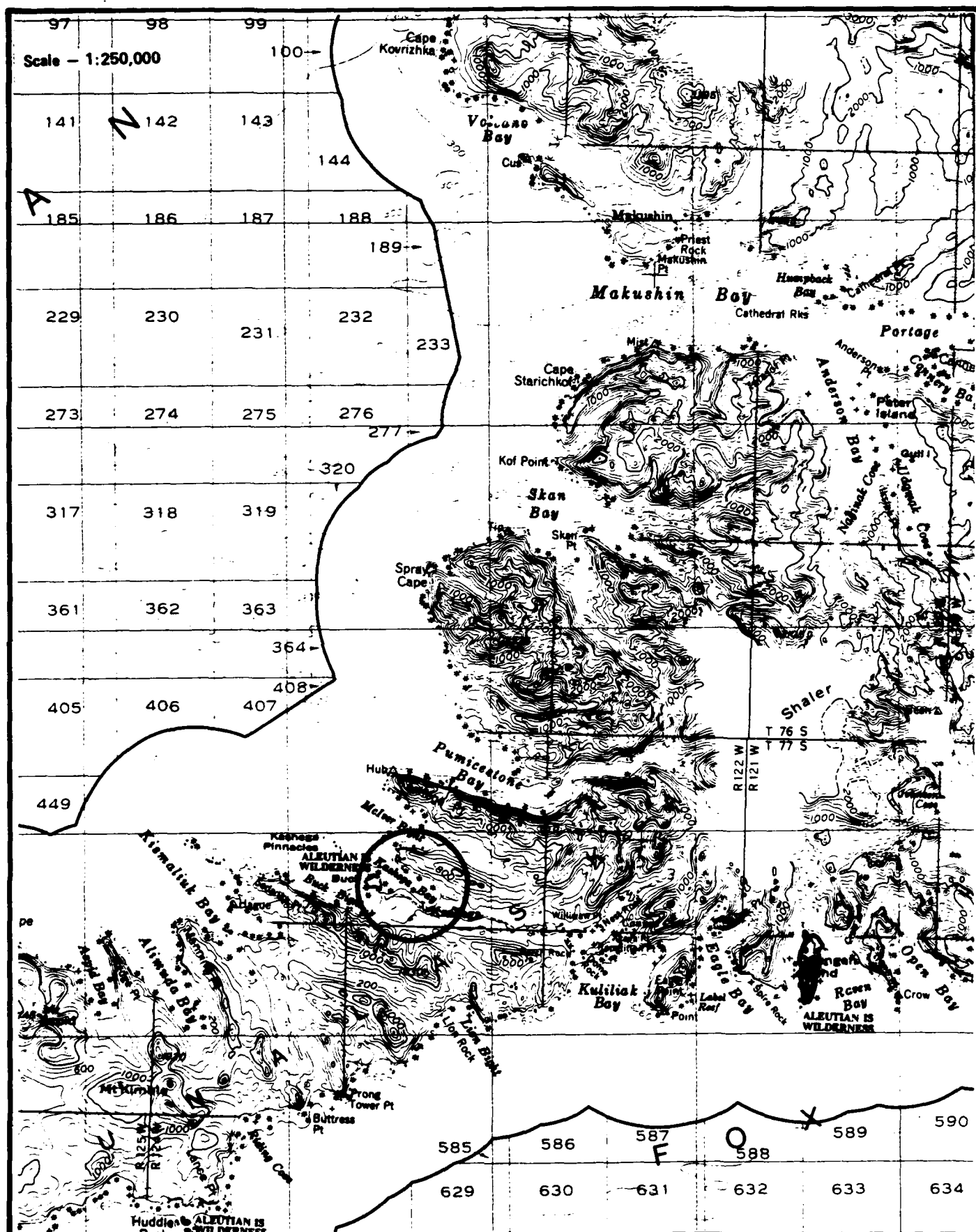


Figure 5-19. KASHEGA

Other Relevant Concerns. One small prehistoric archeological site is reported in the immediate area of Kashega village (Bank 1963). The presumption is that Kashega was occupied permanently by at least a small population, but no data has been found as to its nature. Neither HR 442 or HR 2415 dealing with Aleut restitution mentions Kashega.

Management Recommendations.

1. Since Kashega is on Native conveyed lands and is significant as an Aleut removal site, the Tanadgusix Corporation should be consulted regarding what action they wish to be taken regarding the site. The suggested program would involve a reconnaissance survey to locate, identify and evaluate the integrity of World War II era village remains at Kashega. If no significant remains are located, Kashega should be dropped from the preservation management plan. If significant remains are located, they should be documented and the corporation approached to ascertain if they would accede to a thematic nomination to the National Register. If appropriate, a commemorative marker should be placed at the site.

5.3.26 Killishnoo

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At this time the evacuation of all civilian personnel, especially native, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

The SS Delarof (USAT), which had evacuated the Pribilof Islands, stopped at Unalaska to pick up the refugees from Atka, then headed for the southeast. At the time the ship sailed, with 477 Aleuts from the Pribilofs and 22 USFWS employees plus 83 Aleuts and two BIA personnel from Atka, the authorities were still uncertain where to land the evacuees. Sites on the Kenai Peninsula and in Washington State were proposed before it was decided to locate them in the southeast, near the Juneau Indian Service office. It was reported that the USFWS employees panicked on ship, exacerbating the difficulties. A destination was not determined until June 23, one day before the Delarof docked. The Pribilof Aleuts were to be housed at two facilities at Funter Bay on the northern tip of Admiralty Island. The Atkans were to be transported to an abandoned cannery and fish meal plant at Killishnoo, on Chatham Strait near Angoon. The Aleuts and the two BIA teachers were landed on June 25, 1942. The facilities were in a poor state of repair and there were problems of supply. The water supply was inadequate for the eighty-odd persons who were to occupy the camp, and there were no heating or cooking stoves. The Aleuts became responsible for repairing their own quarters and preparing their food communally. The hardships were exacerbated by the fact that the Navy had burned Atka village prior to evacuation, and the Atkans had little in the way of personal property and supplies. Initially they had only supplies - food, blankets, etc. - left by the Delarof. The BIA supplied the Aleuts for some time, but when they began to get local jobs, the BIA began charging them for their rations. This caused considerable discord, as the Atkans had considerable experience with a market economy and were already providing much of their own subsistence. They felt that since they had been evacuated

against their will and had their property destroyed, the government should provide for them, with their earnings to be for discretionary use in purchasing luxuries and replacement goods and in funding potlatching activities with the local Angoon Indians. The Atkans were not repatriated until May, 1945, at which time the Killisnoo facility was returned to its owners.

The relocation site of Killisnoo is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel, except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one eighth native blood were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by US executive order as potential enemies at about the same time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuations at Nunivak, St. Lawrence and other areas were cancelled.

Facilities Description. No detailed information is available concerning the nature of the facilities of Killisnoo during the relocation occupation.

Present Conditions. No information is available concerning the current state of facilities at Killisnoo.

Other Relevant Concerns. No prehistoric or historic archeological sites are recognized in the immediate area of Killisnoo, which is located in the Admiralty Island National Monument, a wilderness area within the Tongass National Forest.

Management Recommendations.

1. Killisnoo is one of four Aleut relocation sites. A reconnaissance survey should be made to locate identify and evaluate the integrity of World War II era remains at the site. If no significant remains are located, Killisnoo should be dropped from the preservation management plan. If significant remains associated with the relocation camp facilities are located, Killisnoo should be documented, the remains evaluated for stabilization and the site nominated to the National Register. A commemorative marker should be placed at the site. As part of Admiralty Island National Monument, it is under the jurisdiction of the US Forest Service, which may have Section 110 responsibilities with regard to the site under NHPA.

5.3.27 Kiska/Little Kiska

Background. The US Navy conducted surveys in the Aleutians early in the twentieth century, recommending in 1903 that Kiska be developed as a naval base. Lands were withdrawn for that purpose by executive order. The plan was scrapped in 1915, though Morgan (1980:130) claims some site preparation work, including driving pilings for a dock, was done. The Washington Naval Armaments Limitation Treaty (Five-Power Treaty) of 1922, prohibited the US from developing bases in the Aleutians. Even though Japan unilaterally withdrew from the pact in 1934, little attempt was made by the US to develop Kiska (a Navy weather station was maintained 1934-1935). Shortly after the attack on Pearl Harbor, the Navy established weather stations on Kiska and Kanaga. The Kiska unit consisted of 10 men and a dog, serviced by seaplane tender.

Following the raid on Dutch Harbor, the Japanese task force steamed west, occupying Kiska with a force of 1200 troops on June 7, 1942. Nine members of the Navy weather team were captured with a few hours, two being wounded. The unit commander, Aerographer's Mate William House, escaped and eluded the Japanese for 50 days before surrendering, suffering from malnutrition. The Navy detachment and the 42 Aleuts captured on Attu were held on Kiska for about three months before being evacuated to Japan.

The Japanese fleet was spotted by a patrol bomber in Kiska Harbor on June 10, 1942. The decision was made at the highest levels of the Executive Branch and the War Department, primarily for political reasons, that the Japanese occupation could not be tolerated. However, the Navy argued that it did not have the shipping available to mount an offensive to recapture and hold the occupied islands, and a substitute bombing program, the "Kiska Blitz," was started. Mounted from Fort Glenn, the nearest airbase, and from seaplane tenders stationed further west, the bombing was relatively ineffective, but convinced the Japanese to dig in. The Japanese had used the seizure of US territory as a propaganda victory following the defeat at Midway, and milked the holdings in the Aleutians for morale purposes as much as for the strategic roadblock the occupation presented to any Northern Pacific Allied invasion of Japan. Kiska was reinforced to a garrison strength of about 5000. Six midget submarines were delivered for local tactical defense, guns ranging from 13mm to 120mm were emplaced, as was a radar unit. Float-type observation and fighter aircraft were delivered, and construction of winter quarters began.

US pressure was kept up on Kiska. Bombing continued as weather permitted, though the attrition rate was high on both sides. In early August, the Navy shelled the island with little effect. In late August, the US occupied Adak. The construction of an airfield on Adak cut the flying distance for US attackers in half, and attacks were stepped up. The occupation of Amchitka, only 70 mi. from Kiska, in January, 1943, further shortened the range. The pace of attacks and the tenuousness of Japanese supply plus the lack of Japanese success in building an airfield, led to the loss of Japanese aircraft so that by February, 1943, there was no Japanese air cover available. A more aggressive Navy policy of blockading resupply made the Japanese position untenable.

In May, 1943, the decision was made to bypass heavily-defended Kiska, and retake Attu. The garrison at Attu was underestimated, and a three-week infantry struggle was required to recapture it. This was a sobering

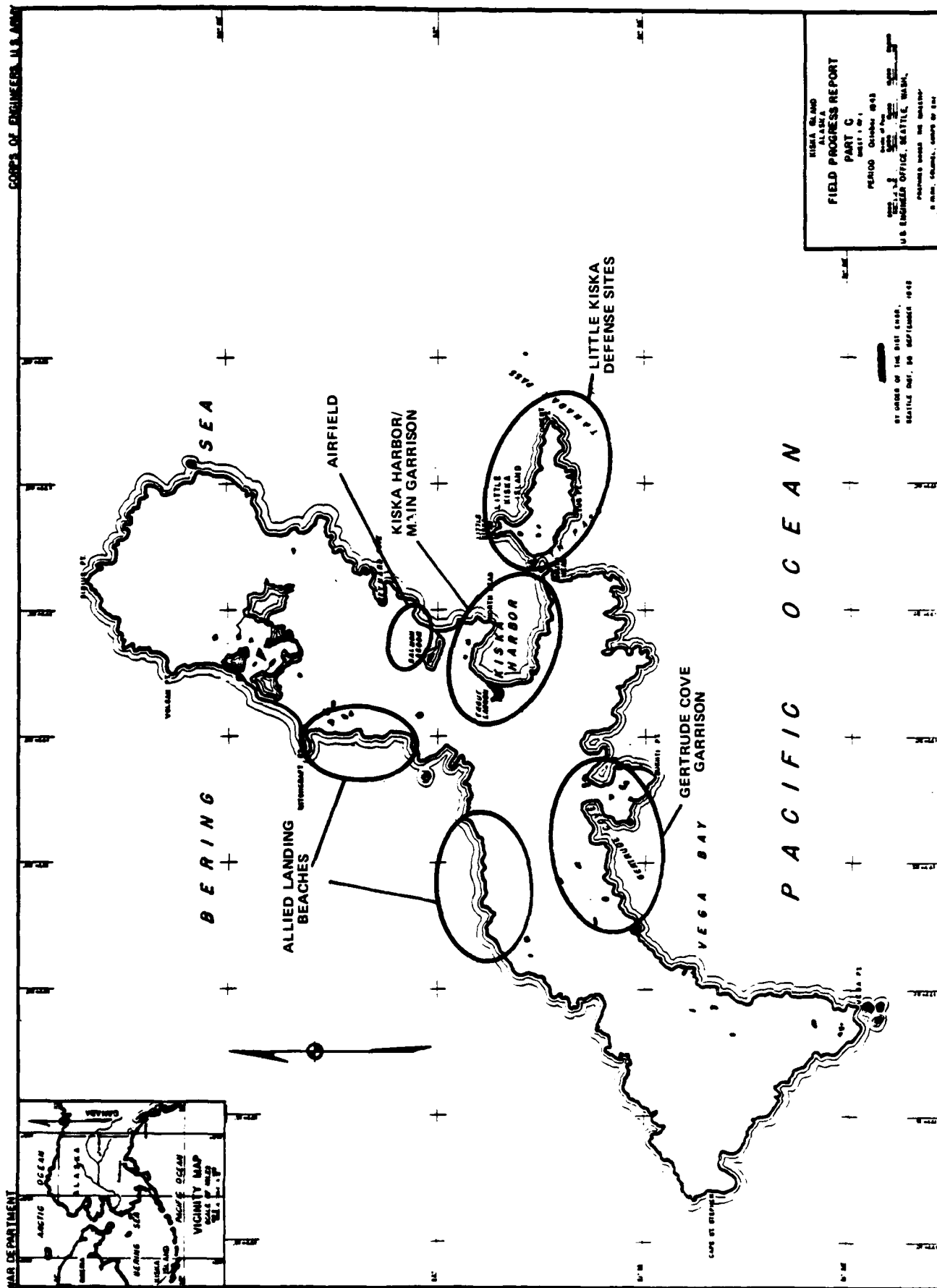


Figure 5-20. KISKA/LITTLE KISKA

development, and the planned assault on Kiska was upgraded as to personnel, training and equipment. The construction of airfields on Attu also allowed Kiska to be bracketed by air cover which effectively interdicted resupply.

The Japanese had decided to evacuate Kiska after the fall of Attu, but were faced with the problem of breaking the US blockade. Submarine evacuation was planned, but the subs could carry few troops and were vulnerable to US attack, and that effort was quickly suspended. With great luck, a surface task force of two light cruisers and six destroyers managed to elude the US blockade, evacuating the 5200 man garrison on July 28, 1943.

Meanwhile, the US had built up an invasion task force, including two battleships, five cruisers and nine destroyers, plus associated other vessels, to deliver 34,000 Allied (5000 Canadian) troops ashore at Kiska. There was to be a feint against the main Japanese positions on the east side of the island, while the main attack force would land on the west side to strike the defenders from the rear. The air and naval bombardment was stepped up in preparation for the assault. Air photo (Photo 5-5) and pilot reports noted no changes in ground conditions and "light" antiaircraft fire, while radio teams noted a total lack of transmissions. Fearing an ambush from fanatic Japanese troops dug in on Kiska, it was decided to mount the full-scale assault. Troops landed on August 15, 1943, locating the dog which had belonged to the Navy weather team but no Japanese. There were 142 Allied casualties (friendly fire, booby traps and misadventure) with an additional 117 being lost when the destroyer Abner Read struck a mine in Kiska Harbor.

With the Japanese effectively removed as a threat in the North Pacific, plans for an installation on Kiska were scaled back from the projected 15,000 man garrison to a holding force of 400, augmented by a small Navy detachment of 275. The post served as an emergency landing field, communications and weather post. The Navy post was closed in September, 1944, with the Army withdrawing in 1945.

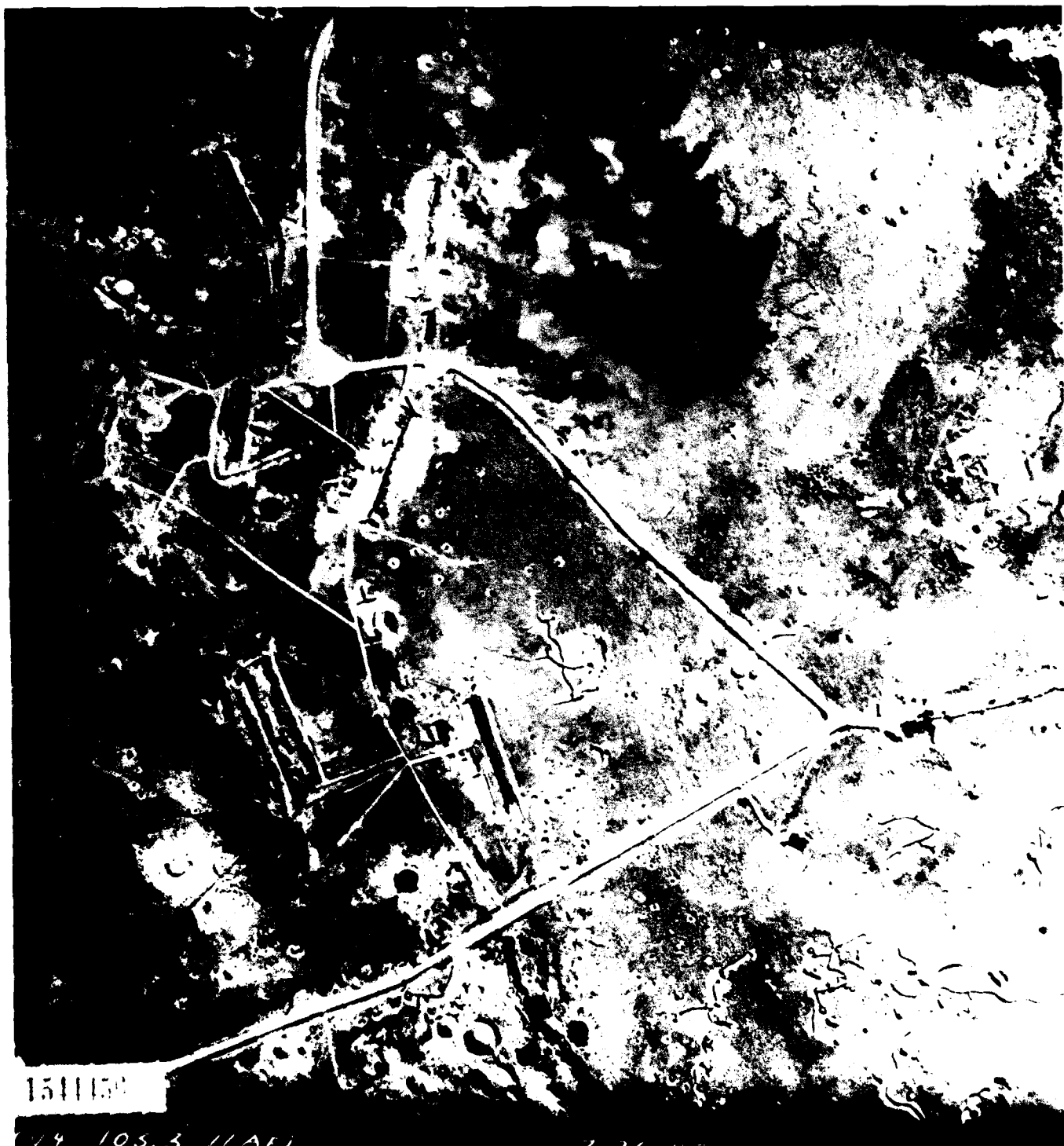
Kiska/Little Kiska is significant in the World War II in Alaska historic context under the Japanese Occupation and Allied Military Operations themes. Though unoccupied and technically across the international dateline, Kiska was politically and geologically part of North America, making its seizure the first occupation of US territory (as opposed to a US possession) by enemy military forces since the War of 1812. While the Japanese accomplished a brilliant strategic withdrawal, the Allied forces, including a substantial contingent of Canadian troops (some of the few involved in the Pacific War), fought the battle anyway, making it one of the few battle sites in the Northern Pacific campaign. The Japanese defenses, including rock-cut underground tunnels and galleries, for housing, hospital facilities, storage and battery communications, were impressive, providing insight in military culture and operations, as well as Japanese construction techniques.

Facilities Description. The initial Japanese occupation was centered around North Head in Kiska Harbor, with facilities being expanded to South Head and onto Little Kiska in summer, 1942, as the Japanese dug in. In fall, 1942, the main camp was shifted south to Gertrude Cove, with roads, trenches, fortifications, utilities and hardened gun emplacements being constructed. Gertrude Cove and Little Kiska were designed as independent units. Work was begun on a 3500 ft runway at Salmon Lagoon, though it was not completed due to a lack of heavy construction equipment (a tramway with dump carts and wicker

Photo 5-5

Aerial Reconnaissance Photo of Kiska
(August 10, 1943)

Source: USAF Photographic Collection, National Air
and Space Museum, Smithsonian Institution.



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carrying baskets was built to haul spoil and fill). A total of over 50 buildings were inventoried, along with artillery/AA emplacements for 12 large caliber guns, three light tanks (type unspecified), pillbox, radar, searchlight installations, an underground hospital and barracks, tank farm, submarine base (with four electric minisubs and drydock facilities), machine shops (including a foundry), roads with lined drainage ditches, 60 Nissan light trucks, 20 motorcycles, eight sedans and six minicars. There were three separate seaplane facilities: a main one with ramps and hangars at Kiska Harbor, another ramp at Salmon Lagoon, and another ramp at West Kiska Lake. All above-ground structures were revetted. Underground facilities had tunnels five feet high with rooms and galleries with raised wood platform flooring covered with tatami grass mats. Five in. ventilator pipes served the underground facilities. Utilities included fire fighting stations, water mains, buried electrical cables and steam and diesel power plants. Food, clothing and ammunition caches were widely scattered over the island. Between 10-12 tons of small arms were inventoried, with many being recovered from the harbor, where they were apparently thrown as troops boarded evacuation vessels. Many of the facilities had been damaged by bombardment, but others showed hasty demolition attempts prior to evacuation.

A total of 12 coast defense guns were inventoried on Kiska and Little Kiska in 1943. There is speculation that some may be captured British guns from Singapore. Many of the British guns at Singapore were destroyed by the British prior to surrender, with the rest left in place by the Japanese for local defense (Falk, personal communication). The myth that British guns from Singapore were shipped to island bases is recounted for various locations (Kiska, Tarawa, Truk, Ponape, Saipan, Peleliu) and is based on British registry plates from pre-war arms sales of Vickers and Armstrong guns to the Japanese, who emplaced them during Pacific campaigns. Nevertheless, Japanese artillery was heavily represented on Kiska.

Another aspect of Japanese facilities was a Shinto shrine, embellished by rows of US Naval shells from the abortive August, 1942, shelling.

When Allied forces occupied Kiska, they reutilized very few of the Japanese facilities. This was due to 1) the high degree of destruction caused by Allied bombardment and Japanese demolition, 2) the (justified) fear that Japanese facilities had been booby trapped, and 3) the different specifications for US military facilities (underground tunnels, for instance, would have to be cleared and heightened for use by taller US troops). Many of the Japanese underground facilities were sealed by exploding charges at the entrance on the argument that the tunnels were hazards and/or breeding places for rats.

Using heavy equipment, US forces completed the 3500 x 150 ft airstrip in under one week. A seaplane facility was constructed at Kiska with an engineering innovation of note: the pierced steel planking used for the ramp was rusting rapidly, so an arrangement was devised to roll the partially flexible mat on a spindle when not in use. A nose hangar was built at the Navy facility along with hardstand, radio, storage, small craft pier, and housing for 275 Navy personnel (services were provided by the Army). Army-built facilities included a total of 1.4 million gallons of petroleum products, a ship dock, barge dock, LST ramp, a 255 bed hospital, and housing, services and utilities for 400.

Present Condition. A total of 253 structure revetments, three wooden bridges, two metal buildings, seven concrete structures/foundation slabs, a submarine pen, three docks, five machine gun emplacements, six machine guns, nine 6-inch gun emplacements, eight metal and/or wooden tanks, an estimated 550 utility poles, lumber, runway mat, POL barrels and miscellaneous debris are noted on Kiska (ACOE 1977:40). Various pieces of machinery and two sunken vessels are also noted, as are two beached Japanese two-man electric submarines. Little Kiska, a defense post on the Kiska Harbor perimeter has five hut-type structures, 1 wooden building, two 6-inch gun emplacements, two AA emplacements, POL, drums and miscellaneous debris (ACOE 1977:41).

Other Relevant Concerns. Handleman (1943b:47) noted remains of wrecked aircraft including "Nakajima and Zero float fighters, a Zero carrier fighter, a Watanabe twin float type, a Soto Iron Works 95-float, an Aichi two-seater float, a Hiroshima Zero float, a Mitsubishi observation float biplane with folding wings, and one Kawanishi four-motored seaplane." An A-20 Havoc and a PBY Catalina are also reported to have crashed on Kiska. Several more Japanese float aircraft are reported to have been sunk in Kiska Harbor during various raids. A sunken I-class Japanese submarine and four freighters, are reported in Kiska Harbor, as is the US destroyer Abner Read. A large variety of Japanese vehicles, including light tanks, were also reported at Kiska, some of which may exist in salvageable condition or as parts.

A variety of Japanese ordnance is also reported in place on Kiska, including the British 12cm and 14cm guns, 90mm AA, 75mm AA-Model 88 (1928), 25mm AA-Model 96 (1936), and 13.2mm AA-Model 93 (1933-double and single mount). At the time of the Kiska invasion, the Allied bombardment was one of the heaviest and most concentrated to date, ranging from .50 cal up to 14 inch naval, plus aerial bombs. Westing (1985) argues that during World War II, roughly 10 percent of all ordnance failed to explode. Numerous injuries to Allied troops which were attributed to booby traps should more properly be charged to delayed explosion of faulty Allied ordnance. Potentially explosive ordnance still exists in some quantity on Kiska.

Other Japanese facilities of interest include the Shinto shrine on South Head and the tunnel facilities which were reportedly sealed in 1944.

There are eight prehistoric/ethnohistoric archeological sites recorded on Kiska (McCartney 1972:26), four apparently within the immediate cleanup area, though many of these may have been damaged during the war.

Kiska is under USFWS jurisdiction as part of the Aleutian National Wildlife Reserve. There are no settlements or facilities on Kiska. A program was recently announced to poison the fox population on Kiska to enable it to support a repopulation by the Aleutian Canada goose, an endangered species.

Management Recommendations.

1. Field reconnaissance should be undertaken to evaluate the integrity of World War II era remains on Kiska and Little Kiska. Of particular interest are the Allied invasion beaches and the Japanese occupation features, including trenches, gun emplacements and facilities. These should be documented using archeological techniques. Of secondary importance are the Allied occupation

facilities. All of these facilities should be documented and any significant features assessed for eligibility to the National Register.

2. Japanese facilities such as underground tunnels (barracks, hospital and storage) should be located, evaluated for structural soundness and, if appropriate, stabilized. They should be mapped and studied to assess construction technique.
3. The Japanese submarine port, including concrete 300 x 20 ft. sub pen and auxiliary facilities should be evaluated for structural soundness and, if appropriate, stabilized.
4. Japanese and Allied seaplane facilities should be identified, evaluated for integrity and documented. A particular effort should be made to identify the US NAAF "retractable" seaplane ramp.
5. Japanese artillery and artillery positions should be inventoried, documented and evaluated as to condition. While the preferred treatment would involve preservation in place, the evaluation should be conducted with a view towards removal to a curatorial facility if the evaluation suggests that the equipment will rapidly deteriorate without more active measures. The Allied defensive positions (155 mm, 90 mm, 37 mm) at North Head should be documented and stabilized as appropriate.
6. An attempt should be made to locate military cemetery sites. These should be evaluated and marked.
7. Thompson (1984c) mentions six Shinto shrines, while most sources mention one large shrine. These should be identified, evaluated, documented, restored and marked as appropriate.
8. The Salmon Lagoon airfield should be evaluated to assess Japanese construction techniques and documented as one of the four emergency landing fields noted in Alaska in World War II.
9. Downed aircraft including an A-20 and a PBY-5A are noted on Kiska as are damaged Japanese aircraft both in a "dump" near Kiska Harbor and sunken in the harbor. These should be treated in accordance with the recommendations presented in Appendix C. Four Japanese Maru (freighters) are reported beached on Kiska, two to six Sydney class Japanese minisubs were present on Kiska and a Japanese I-class submarine and the US Destroyer Abner Read are reported sunk in Kiska Harbor. These should be identified if possible and treated in accordance with recommendations presented in Appendix D. A large number of Japanese vehicles of various kinds were reported captured on Kiska, representing the only Japanese vehicles (with the exception of a very few on Attu) used in the Northern Pacific campaign. Attempts should be made to locate any examples of these vehicles which may be extant on Kiska. These should be treated in accordance with the recommendations presented in Appendix D.

10. A total of eight archeological sites (KS 1-8) have been reported on Kiska and Little Kiska. All have been selected as 14(H)(1) sites by Aleutian and Pribilof Islands Regional Corporation entities. Many have been heavily damaged by construction and battle activities. Kiska is part of the Aleutian National Wildlife Reserve and is designated as a wilderness area. USFWS is obligated under Section 110 of NHPA to evaluate and nominate these sites to the National Register if they are found to be significant. Any work done with respect to known or newly discovered sites must involve consultation with the appropriate Native organization. A suggested program would involve a reconnaissance survey to identify archeological remains. If remains are located, they should be evaluated for integrity and, if appropriate, the Native corporation should be approached to ascertain if they would accede to nomination to the National Register.
11. Since Kiska is currently inaccessible and is slated as a site for the reestablishment of the endangered Aleutian Canada goose, it is not considered a prime candidate for visitation. Therefore, recommendations are tilted towards preservation rather than interpretation. Because of this, however, the bias should be for recovery and removal of relatively perishable remains to other sites where display and interpretation is possible.
12. The boundary of the existing NHL should be expanded to include the Kiska volcano area where several downed aircraft are believed to exist.
13. Several sunken vessels associated with activities at Kiska are believed to be located in waters around Kiska. An underwater archeological survey should be conducted to obtain information on the exact locations of these vessels. Remote sensing surveys should conform to the Minimum Geophysical Survey Requirements to Protect Cultural Resources (DOI 1975).

5.3.28 Kodiak

Background. Founded in 1792, Kodiak is the oldest continuously occupied European settlement in Alaska. The Navy operated a radio station on Woody Island off of Kodiak from 1911 to 1931, and conducted site reconnaissance in the area intermittently from 1933 through 1937. The site was chosen for a base in 1937, and surveyed in 1938.

In 1938, the Hepburn Board recommended the construction of facilities at Sitka, Kodiak and a third site (Dutch Harbor was selected later). A total of \$15 million was appropriated, and Contract NOy-3570 was negotiated with Siems Drake Puget Sound, a consortium consisting of Johnson, Drake and Piper Company, Inc., Siems Spokane Company, and Puget Sound Bridge and Dredging Company. Construction began in September, 1939, but the Greenslade Board recommended additional projects in May, 1941, which were incorporated into the bases. The Army and Navy negotiated an agreement by which the Navy's contractor would construct Army protective garrison facilities. Because Army facilities were added later, they had to be shoe-horned in wherever space was available, resulting in less than optimal siting. Kodiak was also planned using pre-war building types and layouts, which were ill-designed for defense.

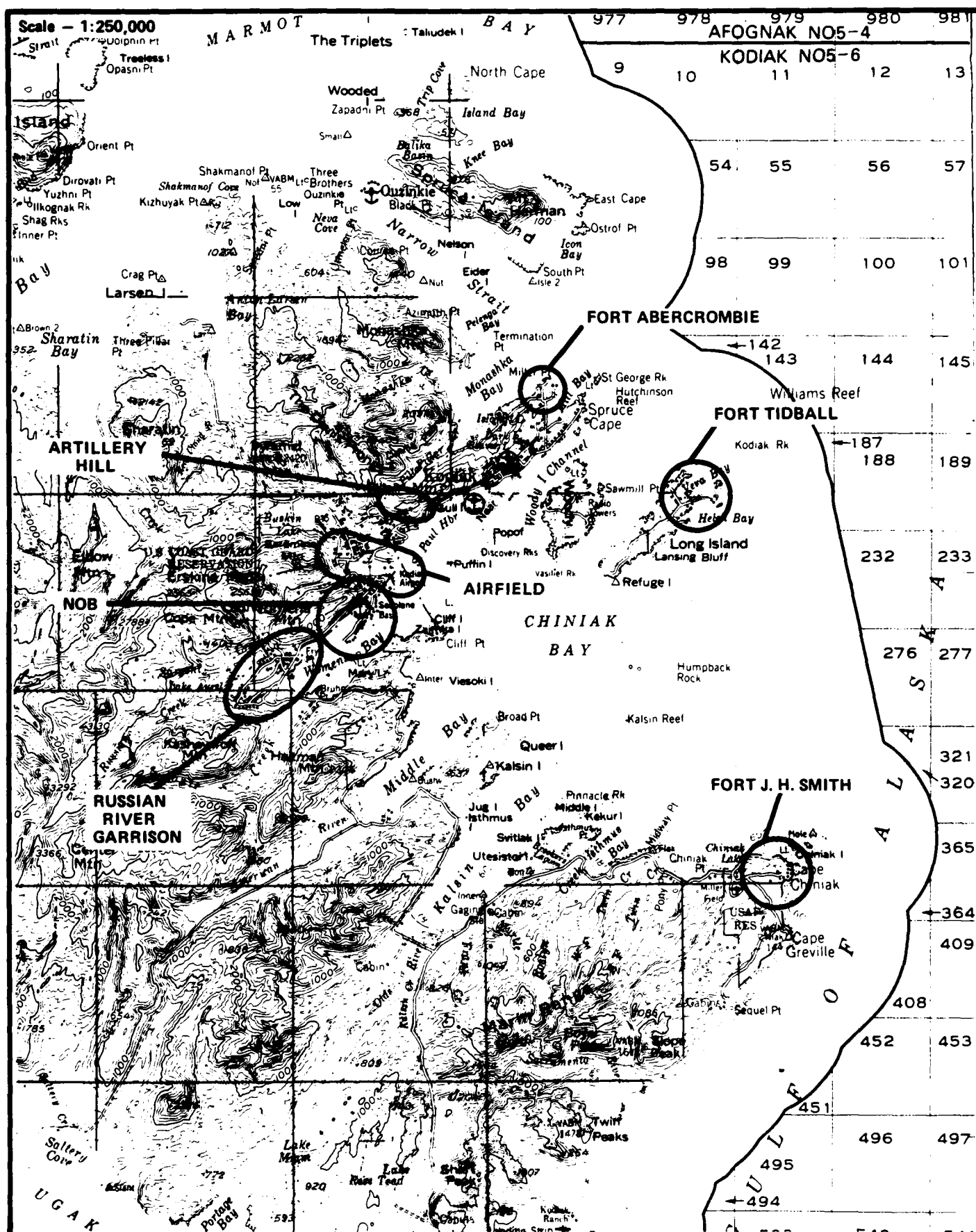


Figure 5-21. Kodiak

The Navy chose Womens Bay (supposedly named because native women used it as a hiding place when European traders put in at the main village) for their main facilities, which would include seaplane facilities, docks and stores and a submarine base. The area south of the Buskin River was chosen for the main airfield and cantonment area. Construction was difficult due to terrain and ground conditions. Kodiak was covered by ash from the eruption of Mt. Katmai in 1902, to a depth of several feet in many places. In others, bedrock outcrops meant extensive blasting was required to establish any level areas for construction. The Siem Drake Puget Sound contractors built three runways south of the Buskin River, a main east-west strip (Runway No. 3, 6000 x 105 ft.), a northeast-southwest secondary strip (Runway No. 1, 5400 x 150 ft.), and a northwest-southeast crosstrip (Runway No. 2, 5000 x 150 ft.) in an eccentric "A" pattern. All were surfaced with concrete. The Army was offered the low, swampy area north of the Buskin River as a garrison site, close to the airfield (where separate Army and Navy aviation facilities were established, defeating the purpose of shared basing), but some distance from the main Naval Operating Base facilities it was assigned to defend. Both Army and Navy construction was of permanent pre-war, standard design, arranged in closely spaced regular rows: impossible to camouflage and an easy target for any attackers.

A separate Navy Alaska Sector (ComAlSec) was formed in 1940, with headquarters at Kodiak, though virtually no vessels, aircraft or troops were assigned to the command. By the end of 1941, the eve of Pearl Harbor, there were less than 6,000 troops at Kodiak and such guns as had been emplaced there (155mm rifles on Panama mounts at four locations around Kodiak) had a total ammunition supply to last 17 minutes. There was one airplane based at Kodiak, a Navy float observation Kingfisher. After the war began, preparations moved forward at a frantic pace, with Kodiak being readied to assume its projected role as central command for Naval operations. With a Japanese attack on Alaska pending in late spring, 1942, Task Force 8 (NORPACFOR), under the command of Rear Admiral Robert A. Theobald, was assigned to Alaska. The Army Air Force was placed under Navy command, leaving effective control with Theobald, who, in the absence of adequate forces and information elected not to be caught in port and cruise 400 miles off Kodiak to be able to respond to any attacks. He feared that the attack on Dutch Harbor was a feint, and refused to commit his forces. He was in fact too far away and hampered by fleet tactical radio silence. The fleet subsequently went on a wild goose chase in the Bering Sea before returning to headquarters.

Kodiak was eventually the forward operating headquarters for both the Eleventh Air Force and the Army's Alaska Defense Command. Kodiak's effective role became that of a supply and support base. It received aircraft, including a Canadian fighter squadron, for tactical defense and patrol work, but the war soon bypassed it. As at other bases, the authorization for permanent coast defense installations was approved in May, 1942, with these elaborate constructions taking an extended period to complete (they were only 70 percent complete in fall, 1943, with completion scheduled for early 1944). In October, 1942, the Navy had begun replacing civilian contract workers with Seabees; the last civilian workers departed in February, 1943. At about the same time, Rear Admiral Thomas C. Kincaid assumed command in Alaska and transferred the Navy's headquarters to Adak. After the Japanese were expelled from the Aleutians, in fall, 1943, the decision was made to wind things down in Alaska. In December, 1943, all Army air bases east of Adak (except Ladd Field and Elmendorf) were downgraded to reserve status, and troops began

transferring out. In December, 1944, the Army placed its facilities on caretaker status and withdrew from Kodiak. Although its role was reduced, Kodiak remained a Naval Operating Base until 1950, and was not finally turned over to the Coast Guard until 1971.

Kodiak is significant within the World War II in Alaska historic context under the allied Military Operations theme. It served as the headquarters for Allied forces for much of the war, and staged Naval operations during the Dutch Harbor attack and its aftermath, and for naval engagements in the Aleutians such as the bombardment of Kiska and the battle of the Kommandorskis. Its elaborate fixed coast defense installations exemplify its role as shore guardian of naval facilities. Under Cold Weather Adaptation/Engineering, it represents the hardships, if not the innovations of construction in Alaska under wartime conditions. Within Transportation/Logistics, Kodiak had major shore facilities which supported operations. Under Native/Civilian concerns, Kodiak was built at an existing town by a large force of civilian contract workers. The implications of the social and economic changes of local populace and the resultant living conditions of the contract workers is significant. Kodiak also served as a minor Lend Lease liaison and transfer station for amphibious aircraft transferred to the USSR.

Facilities Description. The housing at Kodiak Naval Operating Base and Fort Greely (named for arctic explorer, Major General Adolphus W. Greely) was designed to house approximately 20,000 in a variety of arrangements including Navy permanent standard 44 x 181 ft. barracks and Army mobilization 29 x 80 ft. barracks as well as Quonset and Kodiak design structures and wanigans, Officers quarters, including standard BOQ, family, duplex and cottage housing was also constructed. Five water systems, two sawmills, seven sewage systems and six electrical systems were built. Storage for 173,400 barrels of fuel oil, 53,600 barrels of diesel, 1.8 million gallons of aviation gasoline and 1.2 million gallons of regular gasoline was constructed, as was dry and cold storage. Seaplane facilities included two 253 x 386 ft permanent hangars with shops and three dumps. A total of 25 hangars, mostly Kodiak T hangars (112 x 163 ft.), temporary structures, and 70 revetments and bunkers were built. A total of 13 small craft docks and four large craft piers plus a drydock, rated at 175 tons, were built by the Navy with four more built by the Army. Four hospital units with a total of over 500 beds were built.

The Navy proposed a dispersion airfield south of the Russian River at the head of Womens Bay, but it was never constructed. A 5,000 x 140 ft. dispersion field, surfaced with pierced steel planking, was built at Cape Chiniak. A variety of outposts were built around the Kodiak base: a submarine net depot, navigation station and observation post was set up on Woody Island (October, 1942); a communications station at Cape Greville (May, 1943, ceded to the USCG October, 1944); an antiaircraft battery at Entrance Point (1942, decommissioned December, 1943); an outpost on Afognak, subsequently used as a recreation camp (March, 1942). The main outpost was at Cape Chiniak, where the dispersion airfield was located. An SCR-271 aircraft warning system (AWS) radar plus service facilities and housing was built there, going into operation in March, 1942, seven months behind schedule. It was also the site of Fort J. H. Smith, an 8 inch battery. Other defense works include an 8 inch battery (Fort Abercrombie) at Miller Point and a 6 inch battery (Fort Tidball) on Long Island. Prior to the completion of these fixed batteries, defense was provided by three 155mm Panama mounted batteries, each with four guns at Cape Chiniak, Deer Point (Long Island) and Artillery Hill above the main Army

garrison and airfield. Two 90mm anti-PT-boat (AMTB) batteries were located at Puffin Island and Spruce Cape. Searchlight, fire control and support facilities were located at Narrow Cape, Spruce Island, Kizhruyak, Artillery Hill (including a six room, 84 x 40 ft. underground, reinforced concrete command post), Soquel Point, Midway Point, Gibson Cove, Spruce Cape, Long Island, Chiniak, and Miller Point. SCR-296 surface vessel detection radars were emplaced at Long Island, Piedmont Point and Cape Chiniak.

Present Conditions. The landing strips are maintained, as are some of the revetments adjacent to them. The World War II hangars have been demolished. The two permanent 320 x 250 ft. seaplane hangars have been substantially remodeled since the war, and are in use by the Coast Guard. The seaplane ramps are heavily deteriorated (they were damaged in the 1964 Good Friday earthquake). A few World War II era naval structures, including the reinforced concrete power house remain in use in the area around the seaplane base, though most have been demolished (including the ComAlSec headquarters building used by the Navy, Army and Army Air Force as command headquarters during the war). Some facilities remain at the submarine base on Nyman Peninsula, but the only features of note are two piers. The Bells Flats Naval housing area consists largely of a dump.

Most of Fort Greely has been demolished. The main area is occupied by Coast Guard housing. Coast defense structures remain on Artillery Hill and Buskin Hill, including the underground central harbor defense command posts, air raid shelters, Quonset Huts, and 155mm Panama mounts. The 8 inch battery at Miller Point (Fort Abercrombie) has the two gun emplacements, ammunition bunkers, and subsidiary bunkers and facilities. The gun tubes remain on site. The 6 inch battery site on Long Island (Fort Tidball) also has battery remains extant, though their condition is unknown. No data is available concerning other areas and outposts such as Cape Chiniak/Fort J.H. Smith, Woody Island, Spruce Cape and Russian River.

Other Relevant Concerns. Miller Point/Fort Abercrombie is maintained as a state historic park, while the Buskin Hill/Artillery Hill area is leased from the Coast Guard as a state recreation area. The exact boundaries of the Navy, Army and Coast Guard holdings are unclear, and most surrounding land is privately held. The state shares title to part of Woody Island and Long Island with Koniag, Inc., with the area of Fort Tidball on Long Island being disputed. The City of Kodiak is also expanding into areas affected by World War II construction. Numerous prehistoric and historic archeological sites are known in the vicinity of the World War II era facilities, though many were heavily damaged by wartime and postwar construction. Four sites are on or eligible for the National Register (Monashka Bay, Bear Island, Woody Island), and five have been selected by Koniag, Inc. as 14 (H)(1) sites (Monashka Bay, Miller Point, Kodiak, Long Island). Some 28 additional sites are known to exist in the greater Chiniak Bay area. Kodiak World War II facilities have been accorded National Historic Landmark status. A final note is that terrain around Kodiak Harbor subsided almost five feet in the 1964 earthquake, severely damaging many facilities.

Management Recommendations.

1. Remains at the site of Kodiak should be assessed for integrity and documented. If appropriate, they should be evaluated for eligibility to the National Register (Kodiak has already been named a National Historic Landmark).

2. The main airfield south of the Buskin River was a focal point of operations at Kodiak. The airfield, with its associated hardstands, taxiways, revetments and hangar sites should be documented and marked.
3. The remains of the NOB should be evaluated and documented. Features exemplifying the function of this facility include the seaplane facilities (including the two hangars and the hangar-like repair shops), the bombproof power plant, and the docks at the submarine base. Unfortunately, the ComAlSec building which served as headquarters for the US Navy from 1940, and as advanced headquarters for the Eleventh Air Force and Alaska Defense Command from 1942, until the move to Adak in March 1943, was demolished in 1983. The site of this structure should be commemorated. Note: the facilities at the seaplane base are in active use by the US Coast Guard.
4. Little remains at the site of Fort Greely, the site of which is used for Coast Guard housing or is vacant. The remnants of the concrete main harbor defense command post, battery facilities and air raid shelters on Buskin Hill should be evaluated for integrity, documented and, if appropriate, assessed for National Register eligibility. This area is leased from the Coast Guard for use as a state recreation area. Its remains should be stabilized and interpretive displays explaining the layout and function of the harbor/coast defenses installed.
5. Fort Abercrombie at Miller Point is currently a state historic park. The 8 inch guns were blown up in place when the post was abandoned. The wreckage remains in place with the gun tubes pedestalled for display. Koniag, Inc. has claimed a 14 (H)(i) site in this area. Property claims need to be clarified and a plan developed in conjunction with the Native corporation, the State Division of Parks and Recreation and any other affected parties. A recommended plan would entail the evaluation of the remains for integrity, and, if appropriate, assessed for eligibility to the National Register. The battery complex should be restored and developed as a museum, including interpretive displays and artifact displays.
6. Fort Tidball on Long Island should be evaluated for integrity, documented, and if appropriate, eligibility to the National Register established. The affected portion of Long Island is state selected land conflicting with Native selections, and there are two 14(H)(i) Native selections in the vicinity as well. This site has good potential as an interpretive park facility, though ownership issues and duplication of extant facilities at Fort Abercrombie must be assessed.
7. The Cape Chiniak area (Fort J. H. Smith) contained a 6 inch battery, dispersion pierced steel plank surfaced airfield, and the site of an SCR-271 AWS radar (the only one operational at the beginning of hostilities) and an SCR-296 surface craft detector, plus associated garrison facilities. The remains in this area should be evaluated for integrity, documented, and, if appropriate,

assessed for National Register eligibility. This outpost should be considered for preservation, stabilization and interpretation, since it combines a variety of facilities typifying the role of the military in Alaska in World War II.

8. The elaborate harbor/coast defense network protecting the base at Kodiak should be investigated to identify, assess integrity of, document, map and evaluate for further treatment. It should be relatively easy to relocate and reconstruct the information relating to the most elaborate World War II coast defense network in Alaska, but the information needs to be recorded and current conditions assessed before further treatment plans can be advanced.
9. As noted above, the Kodiak area has a variety of known archeological sites. The areas within the NHL and considered as pertinent to it should be surveyed in detail to record and assess prehistoric and historic archeological sites.
10. Kodiak is a significant area and a population center and has scheduled transportation service and tourist facilities, making it a prime site for visitation. A museum should be established with interpretive displays. Potential locations would include the Naval Operating Base site (an active Coast Guard facility), the Buskin Hill defense site (undeveloped, currently a state recreation area leased from the Coast Guard), the airfield (an active facility with few physical remains of the World War II era), and/or Fort Abercrombie (where modest plans exist for interpretive display).

5.3.29 Ladd Field

Background. The first airplane flight in Alaska took place at Fairbanks in 1913. Aviation developed rapidly in Alaska without significant government support, despite lobbying and official recognition of its potential importance to the Territory. An air base at Fairbanks was recommended by the Army Air Corps as early as 1935, with lands for it withdrawn by executive order in 1937. Fairbanks was the main population center in Alaska, centrally located geographically and with respect to existing transportation facilities, and experienced low temperatures consistent with the stated mission of cold-weather testing and training. Fairbanks also had one of only four developed, municipal airports in the Territory to support operations while military facilities were constructed. Funding was not made available for construction until after the outbreak of World War II in Europe in 1939, and authorization was not received until early 1940. Initial surveying work was apparently carried out in 1938 with some site preparation being accomplished in 1939, although serious construction did not begin until 1940. Initial construction was accomplished with a minimum of Army supervisory personnel directing local labor. The concrete runway was hastily completed that summer, with the dedication and first landing occurring in September, 1940. The field, the first military air facility in Alaska, was named for Major Arthur K. Ladd, an Air Corps pilot who died in a crash in 1935. In January, 1941, the remaining facilities construction program was transferred to the ACOE. The runways were reputed to contain more concrete than all the streets and sidewalks in Alaska at the time. The profligate use of concrete not only for runways but also for hangars and other structures represented the only use of such permanent, pre-war plan construction in Alaska in the World War II era.

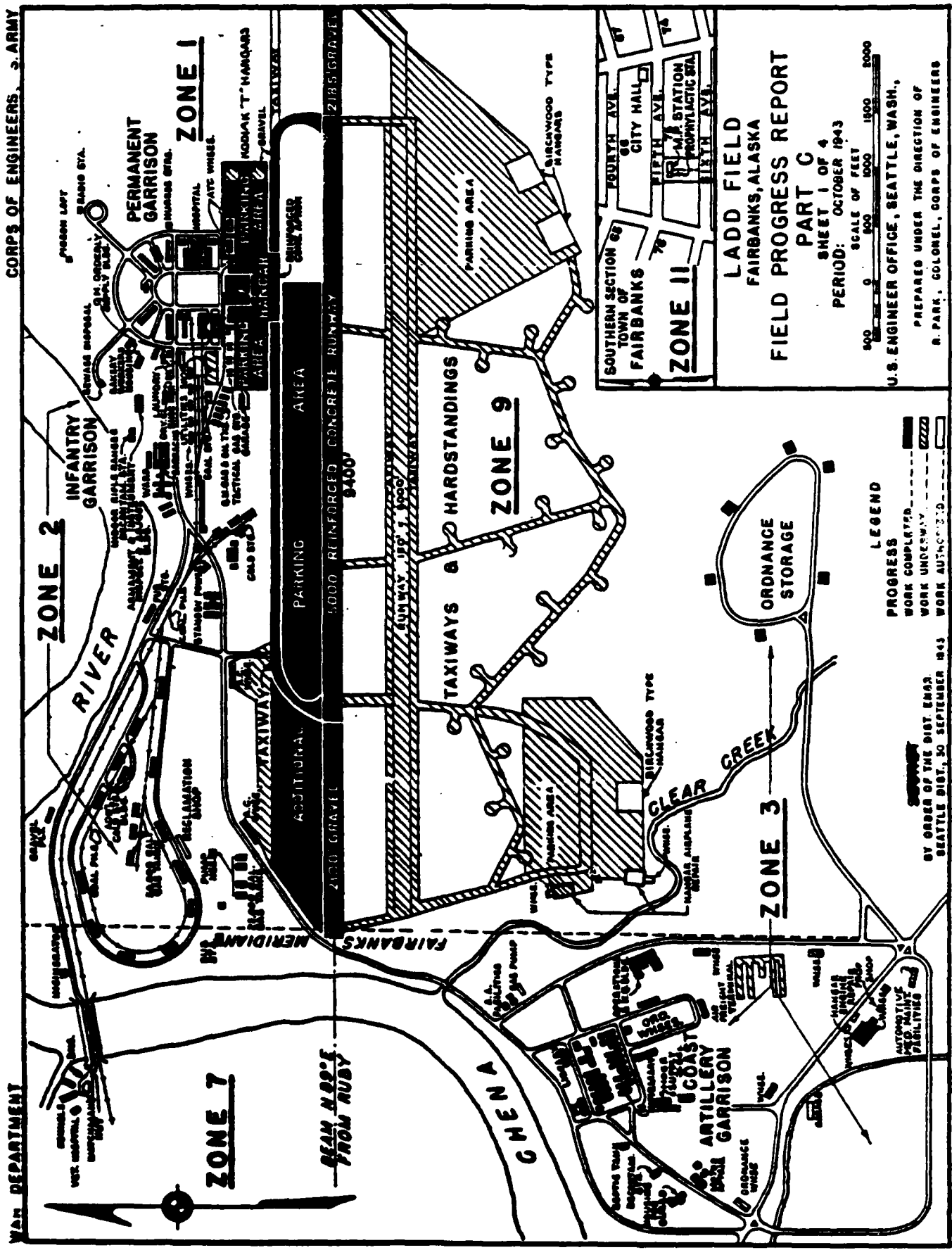


Figure 5-22. LADD FIELD

Construction was also difficult due to permafrost and low temperatures. Materials had to be thawed before they could be used, and solifluction caused sections of the runway to buckle, requiring more subsurface preparation and repouring. A major innovation was the construction of heated, walk-through utilidors. It also became necessary in 1941 to construct dikes along Chena Slough to protect the area from flooding.

The Cold Weather Detachment began its test mission in fall, 1940, with five aircraft (two B-17s, two YP-37s and one O-38F). By fall, 1941, 3 had crashed and one had been recalled to the States, leaving one B-17B, which was assigned to Kodiak for reconnaissance and bombing duty. By mid-1942, the test function was reinstated, partially prompted by the experience on the Russian Front which showed the importance of cold weather operations capability. The detachment developed ski packages for aircraft and made tests on materials, design and maintenance procedures. By the end of World War II, virtually every type of aircraft in the U S arsenal, as well as several foreign models, had been tested, as had a variety of clothing, equipment and material. The detachment continued to operate until 1949, when it was transferred out, it being found more cost effective to use climate control lab-style facilities than to maintain an entire base in the arctic.

In July, 1941, negotiations began with the USSR over Lend Lease transfer. The North Atlantic ocean route was subject to submarine interdiction, and the South Atlantic route involved a 13,000 mi. trip through South America, Africa and Iran. The US proposed a route across Alaska to Siberia. The Soviets resisted since they did not have adequate Siberian bases to handle the proposed volume, did not want Allied personnel in Siberia and feared that the route would provoke the Japanese. However, the relative ease of transfer led to an agreement to establish the Alaska-Siberian, or ALSIB, route. The ATC established its headquarters at Great Falls, MT, and the first Lend Lease aircraft was turned over in August. A total of almost 8000 aircraft were transferred over the route between 1942 and 1945. The ATC simultaneously followed the route with flights to resupply interior Alaska.

Ladd Field became the transfer point for ALSIB aircraft (Nome's Marks Field was considered, being closer to the Siberian destination, but was adjudged too vulnerable to potential attack via the Bering Sea and too difficult to resupply). The official liaison station for the ALSIB route was Ladd Field, and a sizeable Soviet contingent was housed (primarily in Quonset accommodations) on post. The Soviets maintained fastidious standards for acceptance of aircraft, keeping US mechanics busy. The Soviets were prickly allies, and cultural and linguistic misunderstandings made relations difficult. A total of 7926 aircraft were transferred at Ladd Field between 1942 and 1945. While the early transfers were important in providing needed material to the USSR, there were questions as to the degree of necessity of later transfers. There were reports that the Soviets not only used their aircraft to carry luxuries back to Russia, but also that espionage was carried out on a fairly large scale with various classified items being smuggled in diplomatic pouches along the route.

In February, 1942, the Alaska-Canadian (ALCAN), or Military Highway, was approved by the US and Canada. The route was roughly parallel to the Northwest Staging route. In spring, 1942, US engineer construction troops began working on the segments between Big Delta and the international border, using Big Delta as a headquarters. This construction was accomplished over

the 1942-1943 seasons. In 1942, after the attack on Dutch Harbor, the CANOL project was expanded to include CANOL 4, a pipeline following the ALCAN Highway from Whitehorse, Yukon Territory, to Fairbanks to supply petroleum products to the interior. By 1943, as the military situation changed, this project was turned over to civilian contractors. CANOL 4 supplied the interior with oil beginning in 1944. An additional construction project of note paralleling these was the ACS telephone landline which followed the ALCAN/CANOL route. Installed with inadequate equipment under extreme conditions and time pressure, this is considered a major accomplishment of the Signal Corps in Alaska during World War II.

To support the various activities, various improvements were made to Ladd facilities. Ladd was authorized as an Air Depot in January, 1943, and Air Transport Command (ATC) facilities were also added in spring, 1943. Ultimately, facilities were expanded to accommodate 4500 personnel. Construction was essentially complete by fall, 1944. In addition, a satellite/dispersion airfield was constructed at Mile 26 in summer, 1943, by Morrison-Knudsen Company. Ladd was also the focus of communications networks in central Alaska.

At the end of World War II, Ladd was one of the few military facilities maintained on active status. Mile 26 was closed down in 1945, to be ressurected in 1946, being designated as Eielson AFB in 1947 when the Air Force became a separate service. Ladd was turned over to the USAF the same year. In 1960, it was returned to the Army, which renamed it Fort Wainwright. The USAF consolidated operations at Eielson AFB.

Ladd Field is significant within the World War II in Alaska historic context under the Lend Lease theme. As one of the few sites associated with the transfer of military aircraft to the USSR, it participated in a program which provided crucial military aid to an ally. The program was to some extent responsible for keeping the USSR in the war and contributed to the defeat of the Axis powers. The location is further significant under the Transportation/Logistics theme for its association with the ATC Northwest Staging route, the ALCAN Highway, and the CANOL 4 pipeline. While the primary resupply function was performed by sea, the interior air and surface routes played a major role in the development and defense of Alaska. Finally, the Cold Weather/Engineering theme may be cited as well with respect to the difficulties of high-latitude cold weather construction under difficult conditions exemplifying the nature of operations in the Alaska theater during the war.

Facilities Description. The original construction at Ladd Field involved a concrete runway (5000 x 150 ft.), nine buildings for operations and housing for a garrison of 600, six technical buildings, a hospital, fuel storage, utilities, roads and a railroad spur from Fairbanks. Later projects extended the original runway to 9400 ft. and added a second 7200 ft. runway, four Birchwood, two TBA and two Kodiak hangars, repair shops, a tank farm consisting of 37 50,000 gallon tanks, and housing, services and utilities for a total of 4500 personnel. A central steam heat plant was constructed for the original base area (subsequent additions used individual unit heaters). A central 1500 KVA power plant, one of the largest built in Alaska, was installed, as was a septic tank sewage disposal system. The original plan of the Ladd Field facility was based on pre-war, permanent construction, with subsequent additions of temporary wartime construction. The facilities at

Mile 26 were designed for 450 personnel (plus services, technical facilities and utilities) built around a 6000 x 150 ft. runway with a Birchwood hangar. All runways were surfaced with bitumen during fall, 1944, one of the last of the major World War II projects.

Present Conditions. No detailed information has been compiled concerning the present status of facilities at Ladd Field (see Thompson, 1984f).

Other Relevant Concerns. No prehistoric or historic archeological sites are reported for the immediate area of Ladd Field, although the Campus Site in Fairbanks demonstrates that very early remains are present in the vicinity. Extensive construction disturbance may have impaired the integrity of such remains. Ladd Field itself is a National Historic Landmark. It is also an active US Army facility (Fort Wainwright).

Management Recommendations.

1. A variety of structures dating to the World War II era are extant at the North Post of Fort Wainwright (Ladd Field). Records maintained at the post are somewhat unclear. Further documentary research should be done to reconstruct the development of the base, the earliest Army Air Force facility in Alaska, and document the extent and integrity of World War II facilities. Prewar permanent constructions, modified for Alaskan use, should be recorded (Buildings 1047, 1049, 1051, 1045, 1021, 1024, Quarters No. 1, 1541, 1562, 1560, 1555, 1561, Hangar No. 1, hangars 1542, 1543, 2106, 2077, 3005, 3008 and 2085, and the chapel have been noted by Thompson (1984f)). It is important to separate the facilities from the initial authorization from the later 1943-1944 expansion to gain an understanding of the growth and changing mission of the base as war conditions developed. Features such as the original and unique copper sheath roofing and the utilidors (adjudged significant by the ASCE 1976) should be accorded particular interest, as should the power plant.
2. The structures most exemplifying the function and role(s) of Ladd Field during World War II are the hangars, particularly Hangar No. 1, along with its associated hardstands, taxiways, and revetments. This facility served the Cold Weather Test Station, the Air Transport Command and, most specifically, the Lend Lease (ALSIB) program. Hangar No. 1 is unique in its prewar permanent construction, and the associated Kodiak T hangars (1542, 1543) were integral parts of the complex. Hangar No. 1 should be recorded, assessed for structural stability, preserved and marked. Additional hangars are also significant. The three Birchwood hangars - No. 2 (3008), No. 3 (3005), No. 6 (2085) - were late (c. 1944) constructions, which have been modified for subsequent use (as helicopter storage). While other examples of Birchwood hangars exist in forward areas, these are the best preserved and most accessible examples, and should be recorded, assessed for structural stability, preserved and marked. The double hangars - Nos. 4/5 (2106) and Nos. 7/8 (2077) - are also unique. These should also be recorded, assessed for structural stability, preserved and marked. Since in the case of the Birchwood and double hangars, there are more than one example, it is not

necessary to preserve all examples. Rather they should be evaluated in terms of selecting a representative sample for preservation.

3. Buildings 1045 (the original post headquarters, now a guest house) and 1555 (the later headquarters, now a BLM leased facility) should be recorded, evaluated and marked. The radio building (1024) is reputed to have served as the quarters for the Soviet liaison commander (Thompson 1984f). This should be confirmed, if possible, through further documentary research and, if appropriate, marked.
4. Since Fairbanks is a population center with ease of transport access, consideration should be given to establishing a museum with interpretive displays explaining the significance, development and changing military mission of the base, as well as the uniqueness of features at the facility. This should preferably be installed in a World War II era building. At the very least, markers commemorating the role of the Cold Weather Station, the ALSIB Lend Lease operation and the Air Transport Command should be erected.

5.3.30 Makushin

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At this time the evacuation of all civilian personnel, especially native, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

In early July, 1942, the residents of Makushin, a small fishing village on the north shore of Unalaska Island, were rounded up and placed aboard the S.S. Columbia along with Aleuts and BIA personnel from Akutan, Nikolski, Biorka and Kashega Villages. These people were landed at Wrangell Institute in southeast Alaska on July 13, 1942, and transferred to an abandoned CCC camp at Ward Lake, near Ketchikan on July 17, 1942. The Makushin residents eventually joined the Unalaska evacuees at the camp at Burnett Inlet, though Ward Lake was occupied by refugees until August, 1944, when it was turned over to the Army which in turn briefly used it as a camp until returning it to National Forest Service jurisdiction in October, 1944. Makushin served as an observation post and dispersion anchorage for Dutch Harbor during the war. Civilian facilities were appropriated, used, and damaged by military personnel.

The Makushin residents were repatriated to the Aleutians in May, 1945, where they eventually dispersed to settlements at Unalaska. Attempts were made to resettle Makushin, but a lack of support and jobs eventually resulted in its abandonment. It is currently used, infrequently, as a camp on a seasonal basis.

The removal site of Makushin is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel, except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one

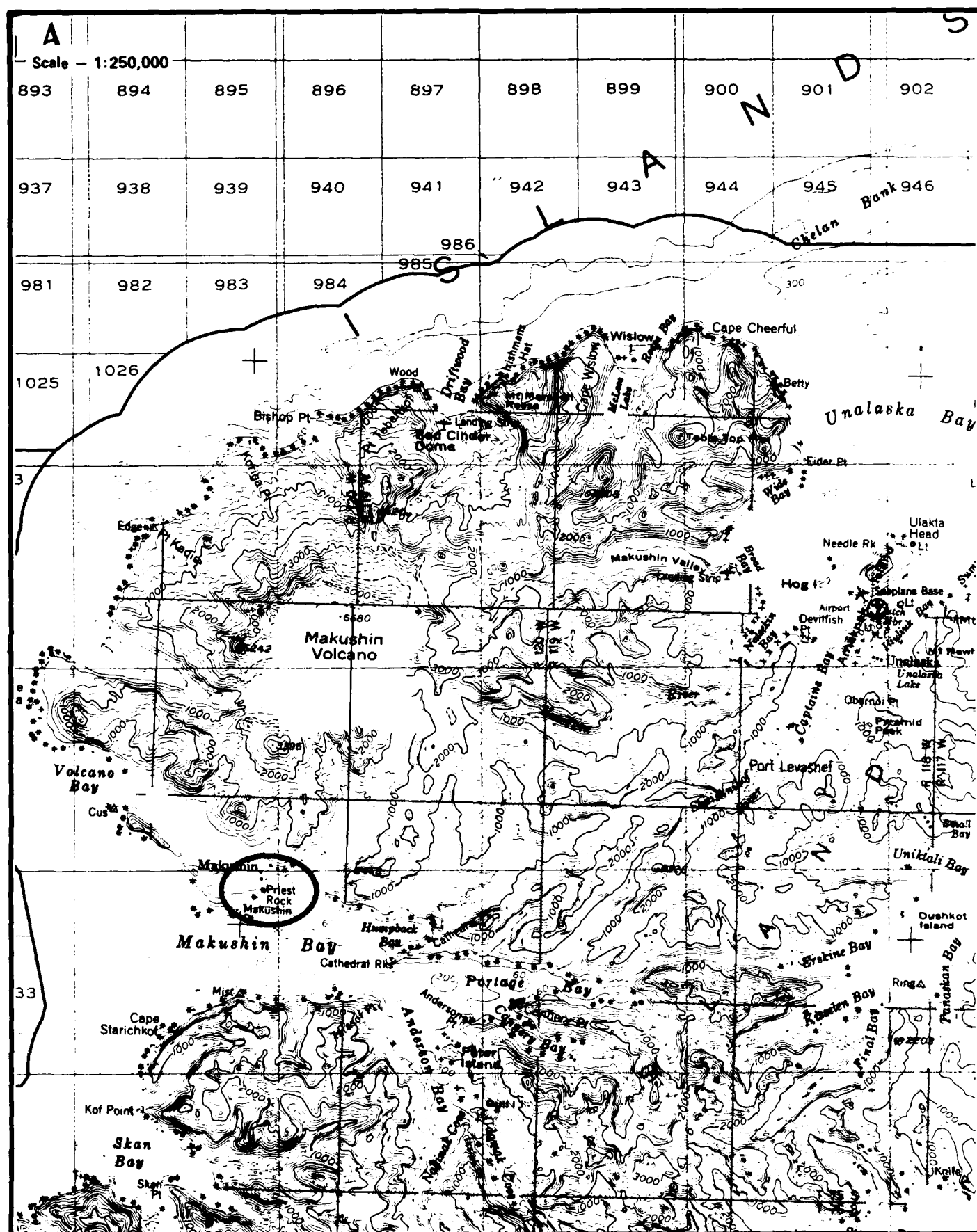


Figure 5-23. MAKUSHIN

eighth native blood, except those employed by the military, were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence neglect and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by U.S. executive order as potential enemies at about the same time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuations at Nunivak, St. Lawrence and other areas were cancelled.

Facilities Description. No information is known to exist concerning the nature of the facilities at Makushin at the time of the evacuation in 1942.

Present Conditions. No detailed information is available concerning the current status of facilities at Makushin, though remains are noted at the site (Veltre et al. 1984).

Other Relevant Concerns. One prehistoric archeological site is reported in the immediate area of Makushin village (Bank 1973). Makushin was settled in the early 1800s. A church (UNL-079), the Holy Nativity of Christ, existed at the site (which is designated UNL-015/UNL-022). Neither HR 442 or HR 2415 dealing with Aleut restitution mentions Makushin.

Management Recommendations.

1. Since Makushin is on Native conveyed lands and is significant as an Aleut removal site, the Tanadgusix Corporation should be consulted regarding what actions they wish to be taken regarding the site. The suggested program would involve a reconnaissance survey to locate, identify and evaluate the integrity of World War II era village remains at Makushin. If no significant remains are located, Makushin should be dropped from the preservation management plan. If significant remains are located, they should be documented and the corporation approached to ascertain if they would accede to a thematic nomination to the National Register. If appropriate, a commemorative marker should be placed at the site.

5.3.31 Nikolski

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At the time, the evacuation of all civilian personnel, especially native, was considered. The general consensus was that it would be inadvisable as well as logistically unfeasible, to evacuate native peoples from their home territories. Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

In early July, 1942 following the evacuation of Atka and the Pribilof Islands, the BIA nurse at Nikolski village requested the evacuation of the roughly 90 Aleuts living there. Nikolski people were transported to the Fort Glenn port at Chernofski, from which they were shipped to Unalaska. There they were placed aboard the SS Columbia along with Aleuts and BIA personnel from Akutan, Makushin, Kashega and Biorka. These villagers were landed at Wrangell Institute in southeast Alaska on July 13, 1942, and transferred to an abandoned CCC camp at Ward Lake, near Ketchikan on July 17, 1942. The Nikolski residents eventually joined the Unalaska evacuees at Burnett Inlet, though Ward Lake was occupied by refugees until August, 1944, when it was turned over to the Army which briefly used it as a camp before returning it to National Forest Service jurisdiction in October, 1944.

Located at the western end of Umnak Island, Nikolski was surveyed in February, 1943, as an emergency landing field for Fort Glenn. An airstrip was recommended, but subsequent tactical developments meant the field was not constructed. The only military use of Nikolski during World War II was as the site of an SCR-271 Aircraft Warning System (AWS) installation which operated from April, 1943, until the close of the war.

When the Nikolski villagers returned at the end of the war, only about 40 resettled the site. This represented an attrition rate surpassed only by that of the survivors at Attu. Between deaths suffered in the Southeast and decisions not to return, the post-war Nikolski population was less than half the pre-war population.

The removal site of Nikolski is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represents a singling out of Native Americans for special treatment. Non-native personnel, except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one eighth native blood were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect and anomie. Their personal property was largely appropriated or damaged by military personnel, and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by US executive order as potential enemies at about the same time. The experience of the evacuation from the Aleutians was so traumatic that planned evacuations at Nunivak, St. Lawrence and other areas were cancelled.

Facilities Description. No detailed information is available concerning the nature of the facilities at Nikolski during the removal period.

Present Conditions. The village currently has 23 houses, a church, school, clinic, store, warehouse and oil storage tanks, plus a 3800 ft. gravel airstrip and about 10 mi. of unimproved roads. The airstrip and most of the roads are postwar developments associated with a DEW Line Auxiliary and a White Alice station. It is uncertain how many of the structures date from before the war, and many are apparently of recent construction.

Other Relevant Concerns. The Chaluka Mound site, dating to c. 4000 BP, is on the National Register and because its boundaries are undefined, it is considered to potentially include the entire village of Nikolski. Chaluka is considered to be one of the most significant known sites in the Aleutians. Other prehistoric and historic archeological sites, including Anangula (c. 8000 BP), are known in the vicinity (McCartney 1972; Stein 1977). All adjoining lands have been conveyed to the Chakula Corporation, which has approximately 75 members. The population of Nikolski village is approximately 45. Nikolski is one of the villages listed in H.R. 442 and H.R. 2415 dealing with Aleut restitution.

Management Recommendations.

1. Since Nikolski is on Native conveyed lands and is significant as an Aleut removal site, the Chakula Corporation should be consulted regarding what actions they wish to be taken regarding the site. The suggested program would involve a reconnaissance survey to locate, identify and evaluate the integrity of World War II era village remains at Nikolski. If no significant remains are located, Nikolski should be dropped from the preservation management plan. If significant remains are located, they should be documented and the corporation approached to ascertain if they would accede to a thematic nomination to the National Register. If appropriate, a commemorative marker should be placed at the site.
2. Attempts should be made to locate the SCR-271 AWS station and it should be evaluated for integrity. If remains are located, they should be documented.

5.3.32 Nome

Background. Nome, on the Norton Sound coast of the Seward Peninsula, had been the site of a mining camp since 1897. In 1899, an Army detachment was dispatched to survey the area and maintain order. With the peaking of the Nome Gold Rush in 1900, the Army set up a permanent facility, Fort Davis, at the mouth of the Nome River, east of town. A garrison was maintained at Fort Davis until 1921, when the Army abandoned the post. It was used for storage by the Alaska Road Commission, and a reindeer corral and slaughterhouse were built on the site.

In spring, 1940, a rumor surfaced to the effect that the Soviets were fortifying Siberian bases which would constitute a threat to Alaska. That and the fall of France to Germany led to a more defense minded stance. The Army requested the CAA to scout airfield sites in western Alaska for military use, and Nome was one of several selected. Funds were so tight, with primary effort going into lobbying for the proposed base at Anchorage, that effort lagged on the development of bases in western Alaska. By early summer, 1941, the Soviets were in a war with Germany which was thought to remove that threat, although belligerence on the part of the Japanese allied with Germany, was leading to an increased tempo of military construction in Alaska.

ACOE construction troops, augmented by local labor, began work on a facility at Nome in July, 1941. They worked with few supplies and lacked heavy construction equipment. Complaints were also made because armament for the strategic location consisted of four light machine guns. By dint of effort,

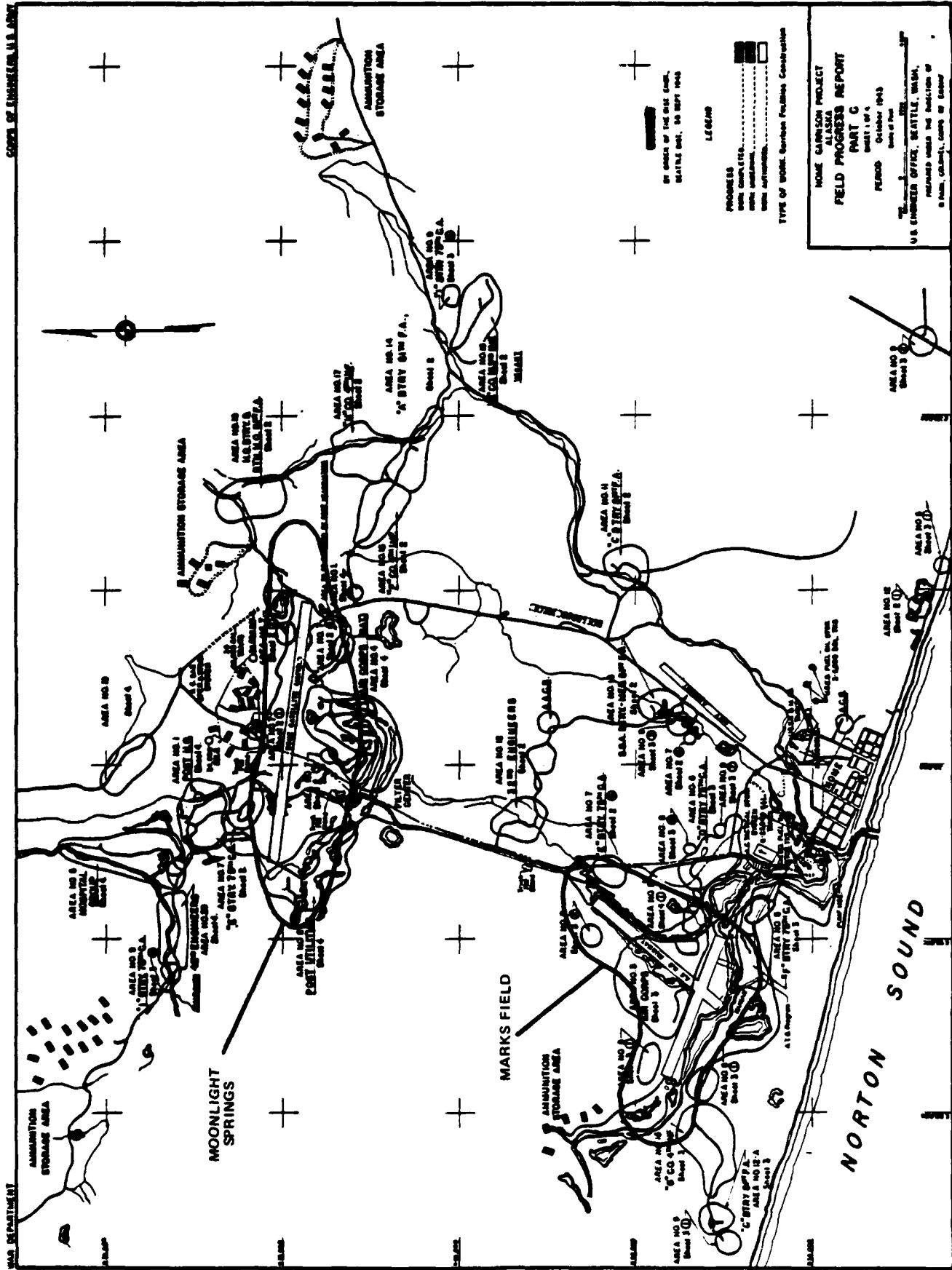


Figure 5-24. NOME

the ill-equipped personnel were able to construct an operational air facility by January, 1942. At that time further plans were put on hold pending negotiations with the USSR to either enter the war against Japan or allow the US to use Siberian bases against Japan. Nome had, in its early days, served as a perimeter port for patrol flights flown between Nome and Naknek to monitor Bering Sea approaches during fall, 1941, when there were hardly any facilities to support them. It was, however, bypassed during the furor of construction during spring, 1942.

That quiet was interrupted with the Japanese attack on Dutch Harbor in June, 1942. Concerned that the Japanese might try a West Coast invasion of Alaska through the Bering Sea, Army Chief of Staff George C. Marshall ordered Nome reinforced. In Operation Bingo, the first massive tactical wartime military airlift, over 2000 troops and 20 AA batteries as well as other supplies were moved to Nome by the first week in July. Beginning on June 21, and lasting 18 days, the operation used a total of 55 military and commandeered commercial aircraft to fly 218 trips, carrying 2035 men and 883,727 pounds of cargo (Draft History 1944:43). In early July, Nome also received its first assigned aircraft, a squadron of hastily diverted B-24 heavy bombers for patrol and tactical defense. These aircraft had been scheduled for operations in North Africa and were known as the "Pink Elephants" because of their light desert camouflage. The Japanese threat proved illusory, and soon most of the Nome garrison was moved to other more active posts. A 6 inch coast defense battery was installed for protection and an ATC unit organized at Nome shortly thereafter.

In July, 1941, negotiations had begun with the USSR over Lend Lease transfer. The North Atlantic Ocean route was subject to submarine interdiction and the South Atlantic route involved a 13,000 mi. trip through South American, Africa and Iran. The US proposed a route across Alaska to Siberia. The Soviets resisted since they did not have adequate Siberian bases to handle the proposed volume, did not want Allied personnel in Siberia, and feared that the route would provoke the Japanese. However, the relative ease of transfer led to an agreement to establish the Alaskan-Siberian, or ALSIB, route. The ATC established its headquarters at Great Falls, MT, and the first Lend Lease aircraft was turned over in August, 1942. A total of almost 8000 aircraft were transported over the route between 1942 and 1945. The ATC simultaneously followed the route with flights to resupply interior Alaska.

Nome's Marks Field (named after Major Jack S. Marks, who was shot down during a bombing run against Kiska in July, 1942) was at one point considered as the official transfer point for Lend Lease aircraft, but it was adjudged too vulnerable to attack and too difficult to supply, and Ladd Field was established as the transfer point and headquarters of the ALSIB operation. A Soviet liaison office was set up at Nome, which, as the last stop before Siberia, was used to refuel and repair westbound aircraft. To support this mission, additional air and garrison facilities were approved in May, 1943. These included extension of a dispersion airfield at Moonlight Springs and construction of a satellite airfield (Davidson Field) further north. Though changes in the tactical situation of the war stopped the planned installation of an AWS unit before any site selection/preparation was accomplished, Nome did serve as a major communications node, relaying for several smaller stations and maintaining air traffic control and weather net functions.

Except for the Lend Lease operation, Nome was a quiet station for the rest of World War II. The presence of a local community, which profited (inflation was 100 percent in Nome during the early months of the buildup) by the military presence, made it a relatively comfortable post. Its strategic position, especially as US-Soviet relations cooled after the war, kept it open until 1950, when it was formally closed.

Nome is significant within the World War II in Alaska historic context under the Lend Lease theme. As one of the few sites associated with the transfer of military aircraft to the USSR, it participated in a program which provided crucial military aid to an ally. The program was to some extent responsible for keeping the USSR in the war and contributed to the defeat of the Axis powers. The site is also significant under the Transportation/Logistics theme primarily for Operation Bingo, the first large scale airlift operation undertaken by the US military. Nome may be further considered noteworthy under the Native/Civilian Affairs theme, since an ATG unit functioned there and the effect of the buildup and wartime operations on the economy and social relations, including acculturation aspects, exemplifies the nature of the war with respect to native and civilian populations.

Facilities Description. The main east-west runway was 4700 x 300 ft., while the north-south runway was 4200 x 300 ft. Both have asphalt surfaces. The Moonlight Springs dispersion field was 5643 x 300 ft., and was extended to 7600 ft in 1943. Dimensions for the Davidson Field facility are not available. Nome had 2.9 million gallons of gasoline (mostly aviation gas) and 850,000 gallons of fuel oil storage capacity. Two Kodiak Type hangars and a Birchwood hangar (Photo 5-6) were built, as were taxiways, hardstands and revetments. Housing, services and utilities for a garrison of 1000 were constructed. Ammunition storage and hospital facilities were also constructed. A 6 inch coast defense battery was installed. Because of a lack of camouflage, the facility was widely dispersed.

Present Conditions. No detailed information is available about World War II era remains at Nome.

Other Relevant Concerns. Marks Field is maintained by the state as an active air facility. Nome has grown considerably since World War II, and many facilities dating to that period have been moved, modified or destroyed. Marks Field is under consideration for inclusion in the War in the Pacific National Historic Landmark. No prehistoric archeological sites are known in the immediate vicinity of Nome, and the southern shore of the Seward Peninsula does not seem to have been an area favored for prehistoric settlement, although several recent native communities exist further east. The town of Nome may have extant features of historic interest related to the Gold Rush.

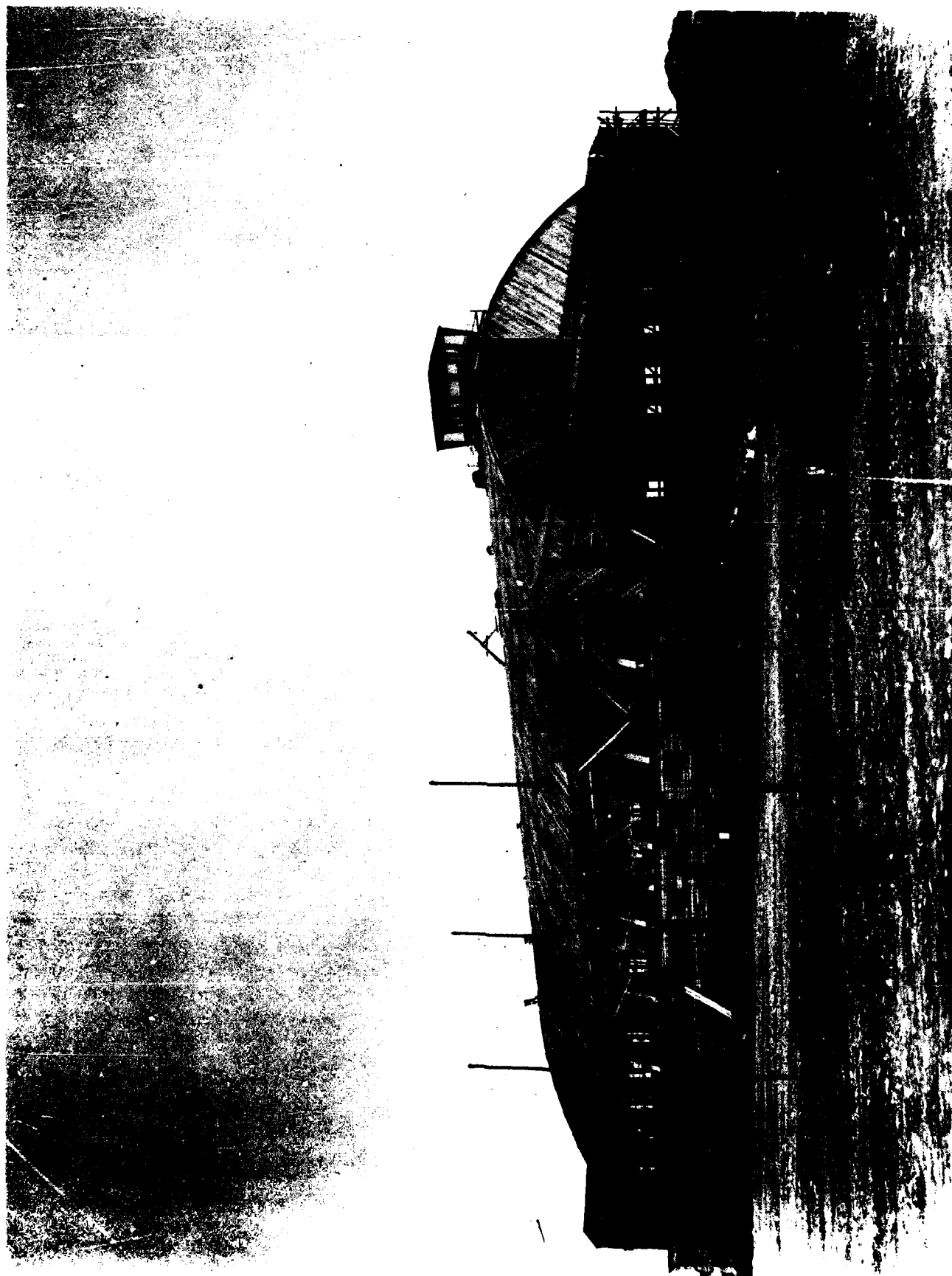
Management Recommendations.

1. As no detailed information is available concerning the current status of World War II remains aside from the satellite inventories (prepared by Woodward Clyde 1985), a survey should be made to document and assess the integrity of World War II era remains. If appropriate, further work should be undertaken to determine eligibility for the National Register.

Photo 5-6

Birchwood Hangar, Nome AFB (n.d.)

Source: USAF Photographic Collection, National Air
and Space Museum, Smithsonian Institution.



2. The primary focus of the facility at Nome is Marks Field, the air facility. This site is under consideration as an NHL, but nomination materials have not yet been prepared. The airfield, taxiways, hardstands, revetments and any hangars should be documented, assessed for structural stability and marked.
3. The dispersion airfield at Moonlight Springs should be assessed for integrity, documented and marked.
4. Attempts should be made to locate and document the locations of the 6 inch coast defense battery and the AA batteries at the installation. If remains are located, they should be evaluated for integrity, documented, and if appropriate, marked.
5. Attempts should be made to locate any facilities associated with the ATG unit in Nome. If such facilities are located, they should be evaluated for integrity and structural stability assessed, if appropriate, for National Register eligibility and marked.
6. Nome played a significant role in World War II (construction, Operation Bingo, Lend Lease), and is a contemporary population center with scheduled air service, making it a potential site for visitation. The establishment of a museum with interpretive displays should be considered. At the least, markers at the airfield should be erected commemorating the ALSIB (Lend Lease) program and Operation Bingo.

5.3.33 Northway

Background. During August, 1940, the CAA was asked to survey airfields with military use in mind. By late 1941, sites were selected, plans drawn up and construction began at 11 sites, mostly in the interior, including Northway, on the Nabesna River near the international boundary. The original CAA facilities were completed in spring, 1942. One of the reasons for the construction of an air field at Northway was to provide an intermediate station along the developing Northwest Staging route, the interior route through Canada designed to be immune to enemy attack such as might occur if a coastal route was used. The problems experienced with the initial ferrying of aircraft led to the establishment of the Air Transport Command (ATC) and a more professional system of moving aircraft, men and materiel to the interior of Alaska.

In July, 1941, negotiations began the USSR over Lend Lease transfer. The North Atlantic ocean route was subject to submarine interdiction and the South Atlantic route involved a 13,000 mi. trip through South America, Africa and Iran. The US proposed a route across Alaska to Siberia. The Soviets resisted since they did not have adequate Siberian bases to handle the proposed volume, did not want Allied personnel in Siberia, and feared that the route would provoke the Japanese. However, the relative ease of transfer led to an agreement to establish the Alaska-Siberian, or ALSIB, route. The ATC established its headquarters at Great Falls, MT, and the first Lend Lease aircraft was turned over in August. A total of almost 8000 aircraft were transferred over the route between 1942 and 1945. the ATC simultaneously followed the route with flights to resupply interior Alaska.

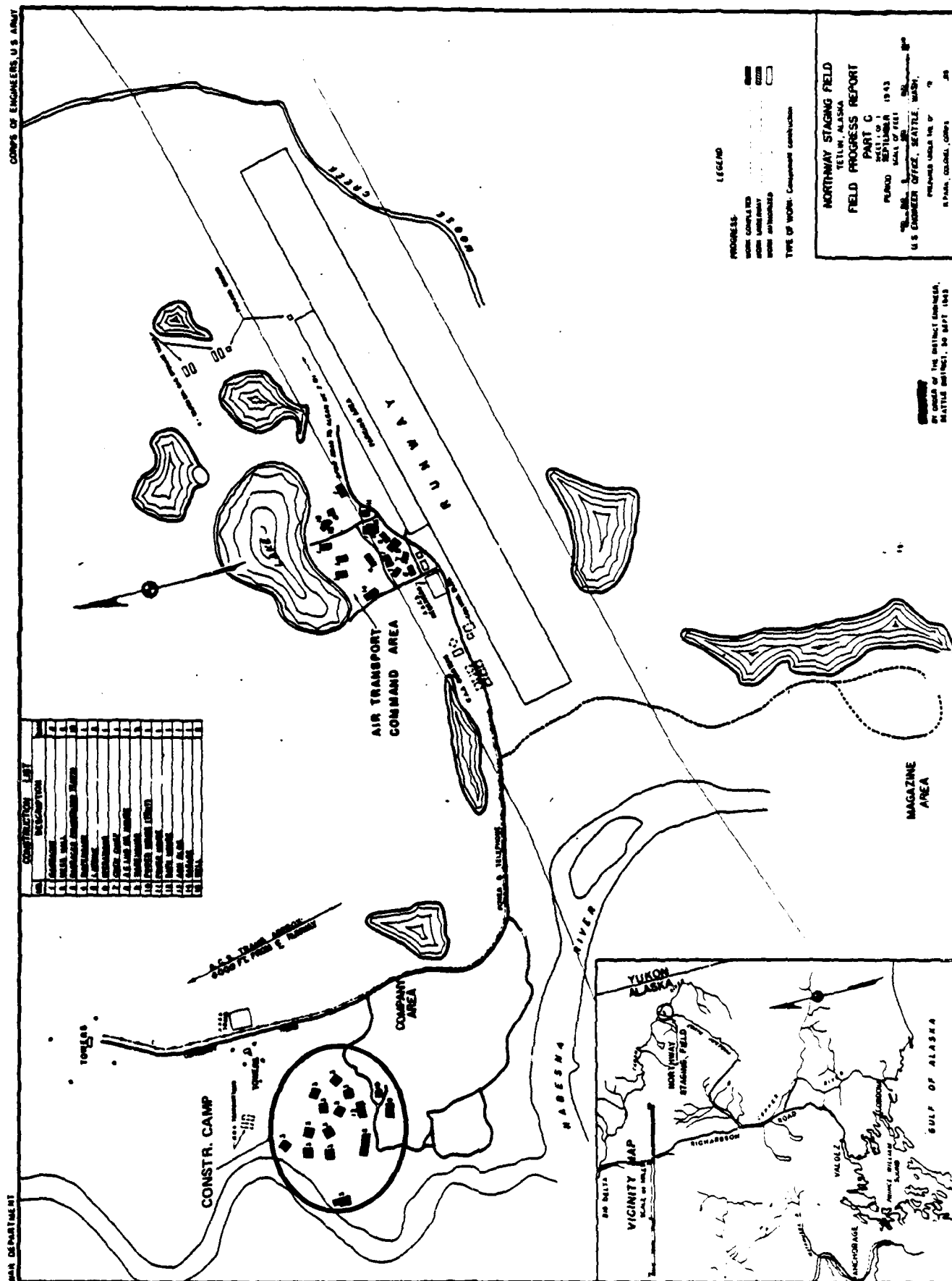


Figure 5-25. NORTHWAY

In February, 1942, the Alaska-Canadian (ALCAN), or Military Highway, was approved by the US and Canada. The route was roughly parallel to the Northwest Staging route. In spring, 1942, US engineer construction troops began working on the segments between Big Delta and the international border, using Big Delta as a headquarters. This construction was accomplished over the 1942-1943 seasons. In 1942, after the attack on Dutch Harbor, the CANOL project was expanded to include CANOL 4, a pipeline following the ALCAN Highway from Whitehorse, Yukon Territory, to Fairbanks to supply petroleum products to the interior. By 1943, as the military situation changed, this project was turned over to civilian contractors. CANOL 4 supplied the interior with oil beginning in 1944. An additional construction project of note paralleling these was the ACS telephone landline which followed the ALCAN/CANOL route. Installed with inadequate equipment under extreme conditions and time pressure, this is considered a major accomplishment of the Signal Corps in Alaska during World War II. While Northway was located some seven miles south of the route followed by these projects, it still participated in the general development of the sector due to the massive construction.

To support all these activities, the original CAA airfield was expanded and garrison facilities were constructed beginning in July, 1942. "The frigid temperatures encountered at this project were probably as severe as on any other construction job in Alaska. Sixty degrees below zero was not unusual. Permanently frozen ground, poor transportation facilities and inaccessibility of the site (by air only in winter) caused considerable delay." (Bush 1944:111). Despite these difficulties, the planned work was completed in summer, 1943, and operations were turned over to the ATC. The facility was closed down in 1945.

Northway is significant within the World War II in Alaska historic context under the Lend Lease theme. As one of the few sites associated with the transfer of military aircraft of the USSR, it participated in a program which provided crucial military aid to an ally. The program was to some extent responsible for keeping the USSR in the war and contributed to the defeat of the Axis powers. The site is also significant under the Transportation/Logistics theme for its association with the ATC Northwest Staging route, the ALCAN Highway, and the CANOL 4 Pipeline. While the primary resupply function was performed by sea, the interior air and surface routes played a major role in the development and defense of Alaska. Finally, the Cold Weather/Engineering theme may be cited as well with respect to the difficulties of higher latitude cold weather construction exemplifying the nature of operations in the Alaska theater during the war.

Facilities Description. The original construction program was designed to provide facilities for 160 personnel (housing, services, and utilities) including a dispensary, operations facility and communications. The initial facilities were housed in winterized tents, which were replaced by Quonset Huts and T/O (frigid zone) structures. The northeast-southeast runway, originally 5300 x 350 ft., was extended to 7500 ft. in 1943, and paved with asphalt in 1944. Fuel storage was in POL drums. The post was located immediately north of the runway. The CAA construction camp was located northwest of the runway on the Nabesna River.

Present Conditions. According to an inventory made in 1985 (Woodward-Clyde 1985a), there are three frame buildings, concrete foundation slabs, and various debris including POL drums, lumber, tar, etc. A tar dump exists to the east of the runway across Moose Creek, and a dump (POL/debris) exists at the west end of the runway near the Nabesna River. No information is available concerning the construction camp area.

Other Relevant Concerns. There are no prehistoric or historic archeological sites recognized in the immediate area of Northway. The airfield is maintained as operational, with air traffic control and a US Customs station. Ownership of the airfield is divided among the State of Alaska, the FAA and Northway Natives, Inc.

Management Recommendations.

1. A reconnaissance survey should be made to locate, identify and evaluate the integrity of World War II era remains at Northway. The features of significance at Northway would include the airfield associated with Lend Lease, the engineer construction camp associated with ALCAN and CANOL and the CAA construction camp associated with the buildup. If upon evaluation, no significant remains are found, Northway should be dropped from the preservation plan.
2. The property types potentially present at Northway are redundant examples of similar property types found at Big Delta. For this reason active measures to record, document, and commemorate remains are recommended only in the event that comparable remains at Big Delta are found to lack integrity or are destroyed at some point in the future.

5.3.34 Point Barrow

Background. In 1923, Naval Petroleum Reserve #4 was set aside to provide a source for fuel in wartime emergency. The area was a 35,000 square mile zone centered on Point Barrow, a native community on the North Slope. No attempts were made to develop the reserve prior to World War II. A task force sponsored by the territorial governor's office made a reconnaissance of the North Slope in fall, 1943. In spring, 1944, the Bureau of Yards and Docks made reconnaissances to establish feasibility of development. An exploration party of 186 Seabees on two ships, escorted by PBYS, left Tacoma in July, 1944. In August, 1944, the party landed, establishing a camp and airstrip at Point Barrow. The main focus of exploration was the Colville River area around Umiat. This area could only be reached by cat train in winter when the boggy terrain was frozen. Point Barrow served as the supply post for this endeavor. It was turned over to civilian contractors in 1946.

Point Barrow was also the location of a native Alaska Territorial Guard (ATG) unit organized by Major Marvin Marston in 1942. It was active until the parent organization was disbanded in 1946.

Facilities Description. No detailed information is available concerning the nature of the facilities at Point Barrow during the World War II period.

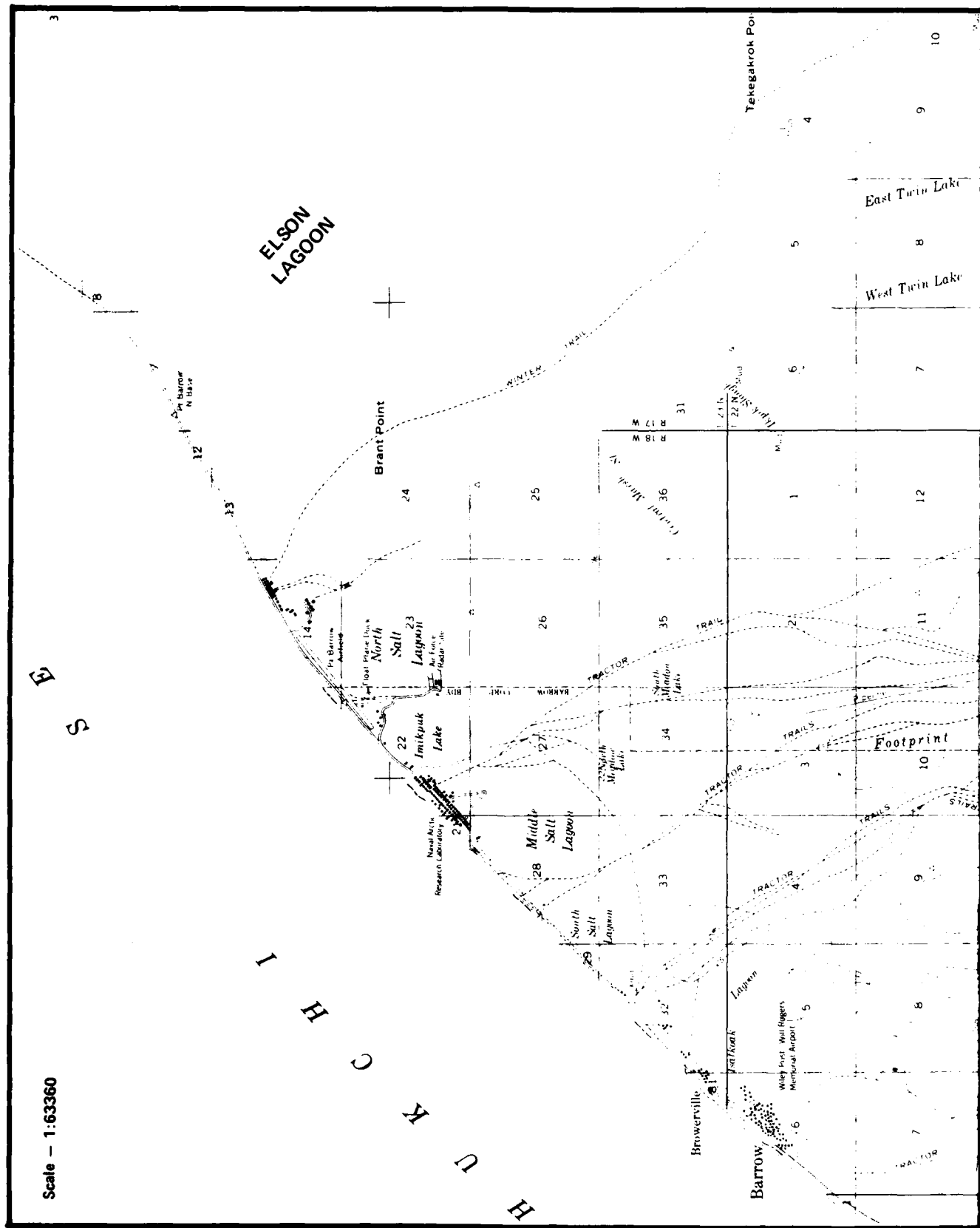


Figure 5-26. POINT BARROW

Present Conditions. The site of the radio station at Point Barrow is now a hospital, with much of the original surrounding community having been cleaned of military debris previously. A variety of debris exists in adjacent Elson Lagoon, where stored military material was blown during a storm in 1963. The material affected included stockpiles of equipment from oil exploration of the Naval Petroleum Reserve No. 4, some of which may date to the World War II era. The equipment includes 15 sets of cat tracks, two unidentified small landing craft, what are tentatively identified as examples of Weasels, POL drums and various tanks and other debris, the majority of it partially or wholly submerged.

Other Relevant Concerns. The immediate Point Barrow area is rich in potentially significant prehistoric archeological remains, primarily of the Thule culture but including the type site of the earlier Birnirk culture. Much of the affected area is being conveyed to the Ukpeagvik Inupiat Corporation.

Management Recommendations.

1. Attempts should be made to locate any remains of the original Seabee oil exploration camp at Point Barrow, as this is a unique example of this property type, significant not only in the World War II context but also in the overall modern development of the North Slope. If remains can be located, they should be evaluated for integrity, documented and, if appropriate, assessed for eligibility to the National Register.
2. Attempts should be made to determine if there were physical facilities associated with the Point Barrow ATG Unit via further documentary research. If such facilities are found to have existed, attempts should be made to identify them, assess them for integrity, document them and, if appropriate, determine eligibility for the National Register. A commemorative marker should be erected if appropriate.
3. An interpretive display should be installed, perhaps at the airport, to explain the development and significance of Naval Petroleum Reserve No. 4.

5.3.35 Pribilof Islands (St. George/St. Paul)

Background. The Pribilof Islands were considered strategic locations following the Japanese attack on Dutch Harbor in June, 1942. Reports suggesting that the Japanese task force had moved into the Bering Sea led Admiral Theobald to fear that the Dutch Harbor raid was feint preparatory to an assault on the Alaskan mainland. The decision was hastily made to evacuate Native and civilian populations and set up an observation post. Four Signal Corps personnel (requisitioned from available transient replacement troops on short notice) and five G-2 (Army Intelligence/Alaska Scouts) personnel were shipped to the Pribilofs to manage the evacuation and man the listening posts.

The SS Delarof delivered these troops and took off the natives and civilians. The Aleuts from St. Paul and St. George were sent to Funter Bay in the Pan handle (Cuttlefish V 1981:101). While they were able to take very little with them, because of limited space on the World War I-era destroyer, the

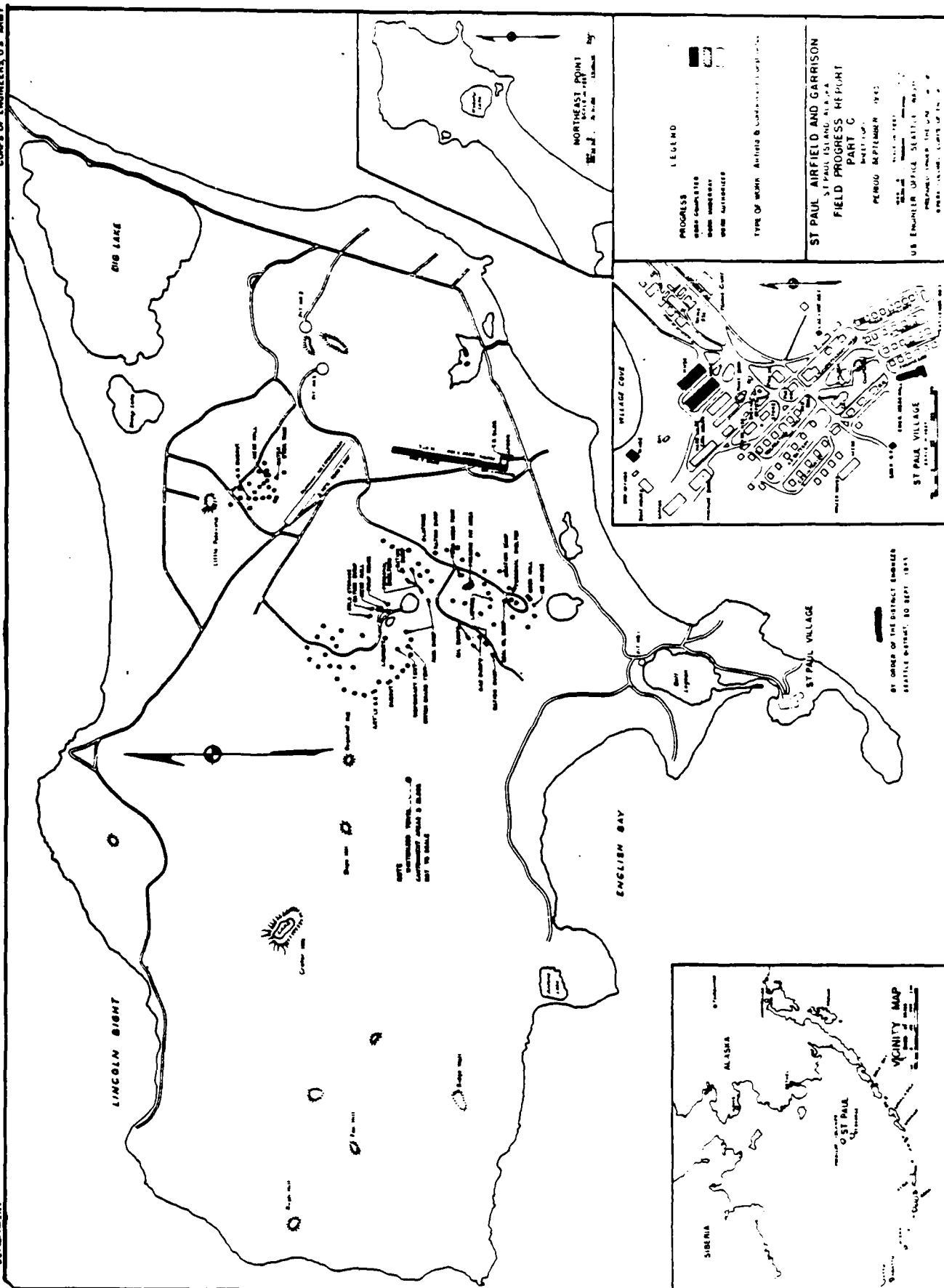


Figure 5-27. PRIBILOF ISLANDS, ST. PAUL

evacuation was fairly orderly. Two Signal Corps personnel were left on St. George, while two Signal Corps and the five G-2 personnel operated the station at St. Paul, beginning June 22, 1942. The detachments were ordered to confirm or deny any Japanese presence in the Pribilofs, provide weather and intelligence reports, to fight a delaying action if attacked and destroy facilities and seal rookeries ("blowing up the island," according to the Alaska Scout sergeant in charge (Ellsworth 1952:4)). The vigil continued throughout the Summer of 1942, until the St. Paul garrison was reinforced by 757 troops of the 297th Infantry - identified by Helbock (1977:130) as consisting of four Alaska National Guard companies, plus engineers - on September 19, 1942. One company advanced to St. George on September 21, 1942. Bush (1944:189) gives the total garrison strength as 1400, probably including the engineers assigned to build an airfield on St. Paul. The airstrip was completed by November, 1942, but the first landing was not made until April, 1943, and St. Paul and St. George were essentially isolated due to pack ice from October, 1942 to May, 1943.

By late Spring, 1943, the military situation had changed, and it was considered so unlikely that enemy action would develop in the Bering Sea area that all construction in the Pribilofs was halted in June, 1943, and plans made to abandon the garrisons. Troops were withdrawn from St. George in August, 1943, with facilities turned over to the US Fish and Wildlife Service. The St. Paul garrison was evacuated in September, 1943, with USFWS taking over. Some civilians, including Aleuts, were returned to the Pribilofs in Fall, 1943, to manage the seal harvest. A ten-man caretaker staff remained at St. Paul, largely to run communications operations. All operations were transferred to the USFWS and the AACS in spring, 1944, with the last military personnel leaving St. Paul in August, 1944.

During the initial occupation, radios were mined and cans of gasoline were placed inside existing buildings. The runway and other military facilities on St. Paul were also mined when the military withdrew in summer, 1943. The mission connected with scouting and defense was terminated fairly rapidly and the advance airfield mission was abandoned shortly after completion of the runway. Bush (1944:190) states that only one Army aircraft ever landed at St. Paul, though History of the ACS-Pribilofs (1945) says two flights were made. Navy PBVs did use the facility infrequently. US Coast Guard Bering Sea patrol cutters Brown Bear and Clover also called at St. Paul. The main mission of St. Paul and St. George turned out to be operation as a weather and communications link, operating as an ACS, AACS-CAA, AWS and Navy radio beacon station. The History of the ACS-Pribilofs (1945) also states that St. Paul was the location of a "secret" USCG radar installation (LORAN).

St. Paul and St. George are significant in the World War II in Alaska historic context under the Native and Civilian subthemes since the Pribilof Islands were among those evacuated during the war. In only a few instances has the US evacuated natives and civilians from a war zone. The individuals involved were given short notice, little allowance for baggage and personal effects, and had their personal property appropriated for military use. Remains associated with these events would be significant. The Pribilof Island sites are also noteworthy for the role they played in communications and military operations. Although the enemy never operated in the area, the uncertainty of the military situation in summer, 1942, and the fact that troops were assigned to operate under harsh and dangerous conditions, altering normal land use patterns and adding infrastructure, makes remains associated with military activities significant.

Facilities Description. St. Paul: At the time of initial stationing of military personnel at St. Paul there was a government-constructed village consisting of 55 structures, including administration, school, church, hospital and warehouse buildings as well as a small concrete dock and drydock facilities. All were administered by the USFWS, and were appropriated by the Army. It was not until the engineers arrived to begin airstrip and facilities preparation that additional construction was begun. Few new structures were built in the village area. For dispersion and logistic purposes, approximately one third of the 1400-man garrison lived in winterized tents near the airstrip area. A 3000 x 100 ft. pierced steel plank main runway was planned, along with a cross runway. Ultimately a main runway 3250 x 100 ft. with a volcanic ash surface was built and the cross runway cancelled. Utilities were not improved, though road building was a high priority project. Bush (1944:191) states that "demountable" buildings were torn down for shipment to other sites, though most equipment and infrastructure was left for USFWS. St. George: Little data is available for facilities at St. George. The ACS unit was initially ordered out of the village to avoid becoming a target, and had to move operations from one building to another as garrison troops arrived and took over facilities. Operations were finally centered in the hospital. There is no information regarding specific World War II construction at St. George.

Present Conditions. St. Paul: Concrete slab foundation and miscellaneous debris exist at the World War II Coast Guard LORAN site. POL drum dumps are located at the airfield, Big Lake and Telegraph Hill as well as fuel storage tanks at various locations in the City of St. Paul. Abandoned vehicles are noted in the dump southeast of town. Quonset Huts are noted near the airfield. St. George: aside from miscellaneous debris, the only World War II era remains consist of a POL drum dump (DACA 85-85-B-0057).

Other Relevant Concerns. The Pribilofs were apparently uninhabited prior to their settlement by the Russians in the late eighteenth century, when an Aleut population was forcibly resettled there to work in sealing grounds (Morgan 1980:3,98-99). The USFWS took over the operations from the monopoly of the Russian-American Company, building facilities and running the sealing operations on a company-town model. No recorded archeological sites have been documented, but such early historic sites would be potentially significant for the investigation of Russian-Aleut relations. Likewise, pre-war USFWS building may be potentially significant for assessing the nature of the sealing industry and government Native relationships. The Pribilof Islands are currently functioning communities, the headquarters of the Tanadgusix (St. Paul) and St. George Tanag Native Corporations who must be consulted regarding management and preservation activities. All lands on both islands were ANCSA selected, so no specific 14(H)(1) selections were made. The early site of Marunich (St. Paul), the Russian Orthodox churches on both islands, and the fur seal rookeries (which are NHLs) are listed in the Alaska Division of Parks registry.

Management Recommendations.

1. Since the Pribilof Islands are wholly owned by the local Native corporations, any management preservation planning must proceed from an understanding reached with those organizations. A suggested preservation plan would entail the evaluation of World

War II era remains for integrity, documentation and mapping, and, if appropriate, the erection of commemorative markers on St. Paul and St. George.

2. No significant World War II construction is reported for St George. This should be confirmed via further documentary research and field reconnaissance, if approved by the St. George Tanag Native Corporation.
3. Airfield facilities were constructed on St. Paul during World War II. These are still in use, and St. Paul is accessible and a potential site for visitation. Interpretive displays dealing with the Aleut removal and the hardships and uncertainty experienced by the garrison during the war should be installed there if approved by the Tanadgusix Corporation.

5.3.36 St. Lawrence Island

Background. St. Lawrence Island, situated on the approach to the Seward Peninsula, began to be considered important due to intelligence reports which placed Japanese surface craft in the Bering Sea following the raid on Dutch Harbor in early June, 1942 (Draft History 1945:42). Fearing an attack on the mainland, probably at Nome, troops were airlifted there and ACS and G-2/Alaska Scout personnel were landed on St. Paul and St. George in the Pribilof Islands and on St. Lawrence Island to monitor any enemy advance and attempt to repel it should it occur (Conn et al., 1964:264). While the Aleuts in the Pribilofs were evacuated, no attempt was made to remove the Eskimos from St. Lawrence. There is no documentation available concerning this occupation, though a BIA radio station existed at Gambell (Draft History 1945:479), which may have been used as part of the network, though the area around Northeast Cape at the eastern end of the island would have provided a better vantage point and was eventually used for AACS and CAA communications facilities during the war (Draft History 1945:497).

After the initial hysteria died down and it became unlikely that the Seward Peninsula would be attacked, Major Marvin "Muktuk" Marston began travelling around Alaska recruiting natives for Governor Gruening's Alaska Territorial Guard (ATG). Cohen (1981:95-97) states that the first ATG unit was formed on St. Lawrence. ATG units and perhaps facilities were reported at Gambell and Savoonga (Geist Papers).

St. Lawrence was not really developed as a communications link until the post-war cold war era, when an Aircraft Control and Warning (AC&W) interim radar surveillance station was built at Gambell in 1949, with a permanent facility going on line at Northeast Cape in 1953. In 1958, Northeast Cape became the site of a White Alice tropospheric communications station (Cloe with Monaghan 1984:161-172).

Facilities Description. No data is available concerning facilities built during World War II on St. Lawrence Island.

Present Condition. The World War II era remains are poorly delimited, with most of the military remains reported on St. Lawrence dating from 1946-1972, and consisting of communications facilities. POL dumps and buried solid

waste, including vehicles and ammunition, as well as other debris, are reported at Gambell. An access tramway is reported at Sevuokuk Mountain, but this is thought to date to the postwar period. Remains consist primarily of debris rather than structures. More recent remains of the AC&W station at Northeast Cape entail structural remains, but there is no indication of extant World War II remains (DACA85-85-B-0055).

No data has been made available concerning the current state of facilities attributed to World War II and scheduled for cleanup on St. Lawrence Island.

Other Relevant Concerns. A considerable number of prehistoric archeological sites are known to exist on St. Lawrence Island, particularly in the area of Gambell and Savoonga. These sites are significant in the study of Beringian cultures and Asiatic-American interrelationships. Of contemporary concern is the opposition of members of the Sivuqaq Native Corporation to the presence of outsiders which might disrupt game. The corporation currently charges a fee for visitation (Anchorage Daily News 1/28/86,C-1). St. Lawrence is an unlikely site for visitation, especially in view of local objections.

Management Recommendations.

1. Since St. Lawrence is wholly owned by the local Native corporation, any management planning must proceed from an understanding reached with those organizations. A suggested preservation management plan would involve further documentary and, in this case, oral history research to identify World War II era remains. If such can be identified, they should be evaluated and documented, and if appropriate, marked.
2. The first ATG unit organized was reportedly formed at one of the villages on St. Lawrence. Attempts should be made via documentary research to confirm this and to ascertain if any physical remains are associated with it. If such remains are located, they should be evaluated for integrity, documented and marked. If appropriate, and if the Native corporation accedes to it, a National Register nomination should be prepared.

5.3.37 Seward

Background. Seward, at the head of Resurrection Bay on the south side of the Kenai Peninsula, was founded c. 1900. In 1904, the Alaska Central Railroad began building track out of the port of Seward, aiming for the Matanuska coal fields and the Tanana Valley gold fields. Renamed the Alaska Northern Railway after reorganization in 1908, the line became moribund until it was bought in 1915 to form the terminus of the proposed Alaska Railroad. The Alaska Railroad was completed in 1923, providing overland transport to the interior and making Seward Alaska's premier port and transport hub.

When the buildup began in Alaska in 1940, Seward was a primary point of concern, since it would serve as the point of entry for the majority of men, equipment and material coming into Alaska. Initially the government-owned Alaska Railroad was to be responsible for post construction and operations, but the railroad proved to be lacking in resources and expertise. In June, 1941, the Army prepared to build Fort Raymond (named after Brigadier General

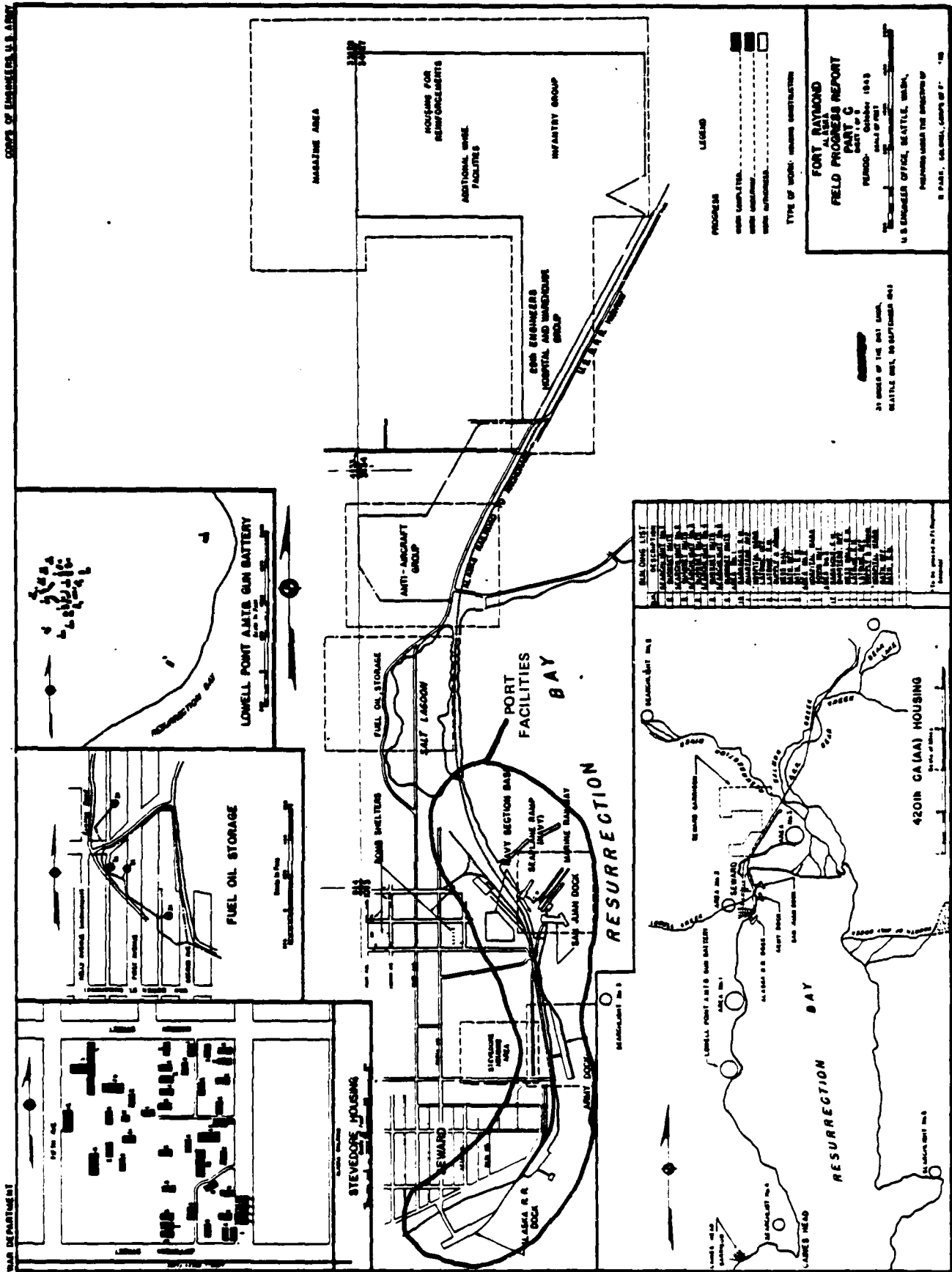


Figure 5-29. SEWARD

Charles Raymond, who surveyed the Yukon boundary in 1886). The Army's primary concern was to improve existing dock facilities (the San Juan Dock), build new docks, unloading facilities (especially for petroleum) and build a tank farm, storage facilities, and garrison facilities for 3500 personnel. Work was to be carried out using local labor under ACOE direction. A CAA airfield was also to be incorporated. Though one of the larger cities in Alaska, Seward had little infrastructure and few amenities, meaning that many facilities had to be built from scratch. A naval facility was also built, beginning in July, 1941; the Army was contracted to put up the minor facilities required.

The heyday of Seward was to be short-lived, as its shortcomings (the limits of its port and the vulnerable, mountainous railroad route through the Kenai Peninsula) led to the decision in spring, 1941, to construct the Whittier Cutoff. Whittier would begin operating in summer, 1943. By that time, the focus of the war had shifted to the Aleutians, and most major interior construction had been completed, leaving Seward to diminish in importance. The Navy withdrew in July, 1943, turning its port duties over to the US Coast Guard. The Army continued to operate the port and finish up authorized construction (which continued until December, 1943). The Army maintained Fort Raymond until 1945.

Another aspect to the Seward story was the construction of elaborate fixed harbor defenses. As the main port, Seward needed protection. This construction was authorized in September, 1942, by which time the Japanese threat to central Alaska had diminished considerably. Nevertheless, construction began in fall, 1942, and was not finished until 1944, by which time the facilities were completely unnecessary. The rugged terrain posed major problems as did lack of men, materials and transport. The coast defense complex was built under contract by the West Construction Company.

Facilities Description. The construction at Seward was designed to have a diverse garrison (Infantry, Quartermaster, MP, Medical, Artillery and Engineer units), totalling 3500, plus separate remote facilities for 800 at battery sites. Prewar CCC, mobilization and T/O construction was used with Quonset Huts being used for later construction. An 830 by 90 ft. Army dock with two 210 x 45 ft. transit sheds, railway connections, and a 22 ton derrick were built. A drydock (rated to 500 tons, 175 ft. long) was also built, as were associated repair shops and a Navy seaplane ramp. Utilities (water, sewer, roads, electrical) were constructed, with three 200 KW power units being installed in Seward and four at Fort Raymond (north of town). Warehousing consisted of 75,000 square feet of general storage, 58,000 of cold storage and 4700 of ordnance. The fuel dump facilities were dispersed through the town, but with the exception of these and the docks themselves most facilities were built on vacant land north of town (west of the Alaska Railroad tracks).

A 6 inch battery was located at Rugged Island (Fort Bulkley/Battery 294) with another at Caines Head (Fort McGilvray/Battery 293) across the bay. A 90mm anti-PT-boat (AMTG) battery was built at Lowell Point. Fire Control stations were built at Rocky Point, Topeka Point, Carol Cove, Chamberlain Point, Barwell Island and Alma Point. SCR-296 surface craft warning radars were emplaced at Caines Head and Rugged Island, while an SCR-582 harbor defense unit was added at Rugged Island. A garrison camp for 850 was built at Caines Head, as was a dock (100 x 40 ft.). Barge docks were built at Topeka Point

and Marys Bay (Rugged Island). Tram lines were installed to handle construction materials and supply at Rugged Island, Barwell Island, Chamberlain Point, Carol Cove and Alma Point.

Present Condition. In the Fort Raymond area, the hospital area is leased to the Army and the Air Force as a recreation camp. The remainder of the area is occupied by residential development, so that the only remaining material dating to World War II consists of three bunkers. At the coast defense sites, three concrete bunkers are noted for Topeka Point, three at Chamberlain Point, six at Barwell Island, and a variety of battery structures and emplacements at Rugged Island. (Sverdrup & Parcel, 1985 Draft Reports).

Other Relevant Concerns. No prehistoric or historic archeological sites are reported from the immediate areas involved. Seward was heavily damaged by the 1964 Good Friday earthquake, when port and rail facilities were knocked out. Much of the town was rebuilt following the event, and, as mentioned above, the military site has been subdivided, developed and is in private hands. The defensive works, while somewhat destabilized, have generally been left in fairly good condition due to their inaccessibility. Rugged Island, Barwell Island, Hive Island and Renard Island are part of the Alaska Maritime National Wildlife Reserve (USFWS). Topeka and Chamberlain Points are on Alaska State land, and Caines Head is a state recreation area.

Management Recommendations.

1. No significant remains are reported in the port of Seward or the Fort Raymond areas. A commemorative marker and/or interpretive display should be installed in the port area explaining the significance of the World War II facilities and operations there.
2. The 6 inch battery complex at Caines Head (Fort McGilvray) should be evaluated for integrity, documented, and assessed for structural stability. If appropriate, the facilities should be stabilized and interpretive displays prepared. The Seward Harbor Defense Sites are under consideration for NHL status, although no nomination has been prepared. Caines Head is currently a state recreation area, and could be developed as a historic park.
3. The 6 inch battery complex at Rugged Island (Fort Bulkley) should be evaluated for integrity, documented and assessed for structural stability. An access tramway and an SCR-296 surface craft detector and SCR-582 harbor defense radar installations were also present. This area is significant for the difficulty experienced in construction. The USFWS may have Section 110 obligations under the NHPA.
4. Other parts of the harbor defense network should be documented via additional documentary research and field checks. An interpretive display detailing the defense network should be prepared and installed, preferably at Caines Head or Seward.

5.3.38 Shemya

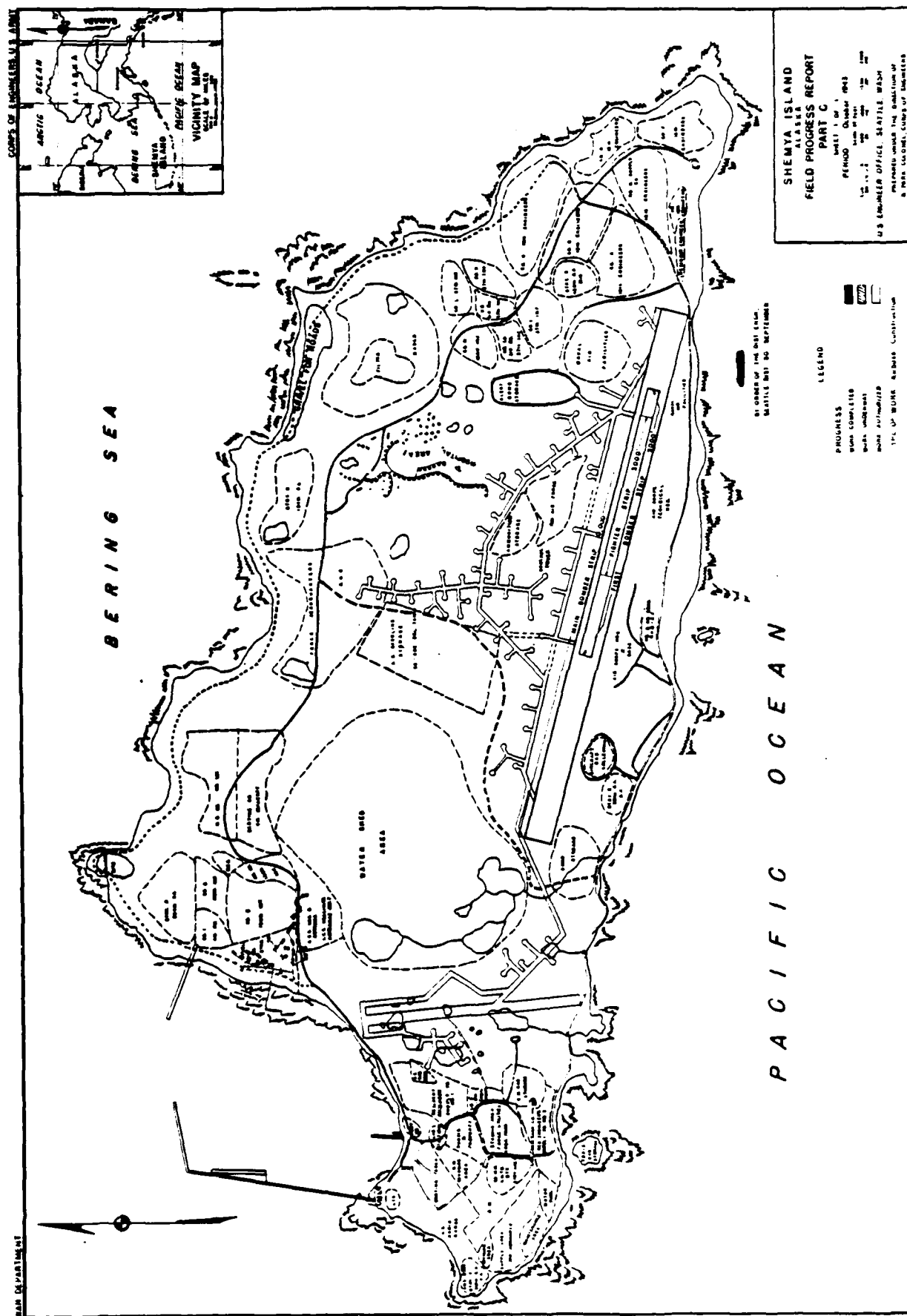
Background. The construction at Shemya was inaugurated to provide an air base between Attu and Amchitka Islands, and to provide an advance air base for attacks upon the Japanese Kurile Islands to the west " (Bush 1944:205). While relatively small (four square miles), Shemya is also relatively flat, making it attractive as the site of air facilities. The Japanese had reconnoitered Shemya and had plans to occupy it with troops from a task force with the assignment to build an airstrip, but U.S. naval and air activity caused the task force to turn back in November, 1942 (Draft History 1944:88). A reconnaissance was made on May 28, 1943, by Colonel B. B. Talley, supported by a detachment of Alaska Scouts, to ascertain the absence of Japanese troops and the suitability of the site for development. The main occupation followed on May 30, 1943, after Attu was secured when 2500 construction troops landed to begin work on the runways. Upon landing, the engineers found only a 1924 Aleutian Fur Company trapper's shed, though evidence was found that the Japanese had reconnoitered the island.

Work began on the runways immediately, with the first sand fill, pierced steel plank surfaced strip being completed on June 21, 1943. The first aircraft (a C-47) landed on June 24. Fighter squadrons (P-40's and P-38's from Amchitka) arrived in July, 1943, with the first bomber (a B-24) arriving in August, 1943, though actual bombing missions originating from Shemya would not begin until late February, 1944. The advance bomber command was moved from Adak to Shemya, with the XI Strategic Air Force headquarters being established at Shemya on March 1, 1944. The last Japanese aerial action in the sector was a bombing raid by G4M Bettys from Paramushiro on October 13, 1943, after which the B-24's and B-25's made runs against Japanese bases in the northern Kuriles. The last combat mission was flown August 13, 1945.

In Fall, 1943, the decision was made to prepare Aleutian forward bases for stationing B-29's. Extension and paving of the bomber strip (Runway A) was authorized in December, 1943, and begun in August, 1944, and completed in December, 1944, using asphaltic concrete paving. Construction was done under contract by S. Burch & Co. and Morison-Knucken, Inc., and the world's largest portable asphalt plant was built on site (Mills 1978:130). B-29's were never based in Alaska during World War II, though a reconnaissance mission was flown by a B-29 to Shemya on May 11, 1945, the only presence of such an aircraft in the Aleutians during the war.

Subsidiary missions at Shemya included Navy patrol and weather operations. Shemya was a Naval Auxiliary Air Facility (NAAF) from June, 1943, until it was disestablished in October, 1945. Monitoring and surveillance was also undertaken from Shemya. Some of the first women assigned to the Aleutians were stationed at Shemya: five Army nurses of the 329th Station Hospital arrived in January, 1944, to be followed by the first civilian woman, a Red Cross Aid, in September, 1944 (Cloe with Monaghan 1984:128)

In late 1945, Shemya was placed on caretaker status. It was inactivated after the Korean Conflict in July, 1954, and transferred to the CAA in 1955. The CAA leased the facility to Northwest Airlines as a fueling stop on their Great Circle route to the Orient from 1955 to 1961. The US Air Force reactivated Shemya as an Air Force Station (AFS) listening post in 1958, upgrading it to an Air Force Base (AFB) in 1968. Shemya also became a White Alice



tropospheric communications station in the early 1960's. It is currently an active military base and restricted due to its classified national security mission.

The military site at Shemya is significant within the World War II in Alaska historic context because of the air combat support role it played in the harassment bombing raids of the Kurile Islands. It played an ancillary role in the expulsion of the Japanese occupation forces from Kiska in 1943. After expulsion, Shemya served as headquarters for the bombing effort and was prepared for B-29 basing. Its role as a communications and monitoring post was (and continues to be) significant under the communications subtheme. The development of dock and airfield facilities is significant under transportation and logistics and under engineering, which was carried out in a war zone by civilian contractors, applies to the civilian activities subtheme. Finally, the presence of at least scout patrols makes Shemya noteworthy under the Japanese occupation subtheme.

Facilities Description. The original plans for Shemya called for the construction of two runways: a bomber strip 10,000 x 150 ft. and an auxiliary strip 4500 x 150 ft., surfaced with pierced steel planking, plus taxiways and hardstands, six Kodiak hangars, two portable steel combat hangars, tanks for 1.5 million gallons of aviation gasoline, 3.15 million gallons of fuel oil, and 0.35 million gallons of gasoline, steel warehouses, and housing, services and utilities (including a 450-bed hospital) for approximately 10,000 personnel. The Naval Auxiliary Air Facility, constructed by the Seabees, included a seaplane ramp, parking area and quarters. Facilities were later expanded to include asphaltic concrete paving of the bomber runway (Runway A) to a width of 500 ft. and the 4500 ft. runway (Runway B) to a width of 300 ft. The runway construction had involved cut and fill of the sand base to depths of as much as 50 ft. and the use of burlap to stabilize the sand from aeolian erosion. Because of supply problems, barge and ship docks and an LST ramp, with rock crib jetties were also authorized as was the drilling of wells to augment the surface water supply. A 300 ft. rock crib barge dock and a 1400 ft. ship dock, protected by two breakwaters, were constructed in July, 1944, in Alcan Cove on the western end of Shemya. In November, 1944, the east jetty was washed out entirely, as was the ship dock, leaving only 1,000 feet of the west jetty and the crib dock (Mills 1978:129). The facilities were only partially rebuilt.

In 1944, a third 5000 ft. runway (Runway C) was constructed, and asphalt paving completed; Runway B was also extended to 5000 ft. in length. Two Birchwood hangars were built in 1945 to accommodate B-29's. A YM radar navigation system and Bartow lighting-approach system was installed. An SCR-588B AWS facility was completed in September, 1943, with a coast artillery AWS station (SCR-296) being completed in November 1943. By 1945 there were four AWS stations operating on Shemya. AACS facilities were built on Skoots Island, 100 ft. south of the southwest end of the island. Initially, this was reached by a bridge constructed in 1943, replaced by a causeway in 1944. Four subcables were laid up to Attu, three from a point on the northwest tip of the island, west of the dock area and one from the southwest part of the island, east of Skoots Island. A bombproof reinforced concrete ACS facility was constructed on the northeast side of the island. Three inch shore defense batteries, plus 155mm and 90mm artillery, were also emplaced. The 3 inch shore batteries, south of the Runway A, were controlled from underground

reinforced concrete battery command stations. The facilities at Shemya suffered from a lack of space which led to crowding and a lack of dispersion. Attempts were made to expand peripheral facilities to Nizki and Alaid Islands, but a lack of access and landing sites prevented effective use of these nearby islands.

Present Conditions. The ACOE (1977:138) apparently defines the potential cleanup area for Shemya as the entire island. ACOE (1977:41-42) inventoried a total of 27 World War II Quonset/Pacific type huts, 33 wood-frame structures, 23 concrete/reinforced concrete foundations, 16 reinforced concrete defensive structures, 17 burned wooden structures (the hospital complex), 349 structure revetments, 81 storage tanks and five ammunition bunkers. In addition, approximately 10,000 POL drums, 18 pieces of construction equipment and various amounts of pierced steel planking and other miscellaneous debris were noted. Three 3 inch coast artillery emplacements, a Renault tank turret and earthen mortar battery emplacements with associated fire control structures were noted, as was a 155mm carriage (Figure 18, page 59) near the dock area. An Athey crawler trailer (ACOE 1977:81) in good condition is also mentioned as being present, and the hospital is noted as being burned (ACOE 1977:330, figure 132). Only one Birchwood hangar, referred to as B-29 Hangar No.1 (ACOE 1977, figure 21), is mentioned, though Cloe with Monaghan (1984:132) illustrate two. Crum (1985) reports that the breakwaters in Alcan Cove are gone and that the rock crib and wooden pile docks have been replaced by reinforced concrete structures. Crum (1985) also notes that the original asphaltic-concrete bomber airstrip was destroyed by an earthquake in 1966. It was rebuilt, with only segments of the original buckled and broken segments remaining adjacent to the current airstrip.

Other Relevant Concerns. Four archeological sites have been recorded on Shemya by T. P. Bank (McCartney 1972:26). Three are located along the north side, with another near the southwest corner. As elsewhere in the Aleutians, all were in coastal locations. McCartney notes that all were small sites and were likely damaged in connection with military activities. All have been selected as 14(H)(1) sites. Since the density of military occupation was stated to be a problem as early as 1944, it is likely that post-war military activity has obliterated much of the original base. The earthquake which is reported to have destroyed the bomber runway in 1966 (Crum 1985) may also have damaged other areas of the base. There is also the possibility that live ordnance exists on Shemya. Finally, the classified mission and required security clearance of the current military installation means that it will be difficult to obtain more detailed information concerning remains on Shemya, and that national security considerations would likely override archeological and historical preservation management concerns. Shemya is not a likely site for visitation.

Management Recommendations

1. A detailed inventory of structures and facilities of World War II vintage at Shemya and their current state should be undertaken if data collected by the ACOE in connection with DERA is not adequate or suitable for preservation planning needs. The NPS and SHPO should immediately consult with the ACOE to insure that the level of effort in the final design analysis funded by the ACOE is consistent with preservation planning needs. This action is necessary to provide an

adequate data base to determine if specific remains should be avoided during the cleanup. Areas of specific interest are the bomber strip and associated facilities and defensive emplacements.

2. Attempts should be made as part of the inventory procedure to locate any evidence of Japanese occupation, prewar occupation and the location of World War II dumps and privies, using archeological techniques.
3. Testing should be undertaken to assess the characteristics and extent of the aforementioned features.
4. Runways and revetments should be documented.
5. An evaluation of the existing Birchwood hangar at Shemya by a structural engineer should be undertaken to determine if it presents an immediate danger, if such an evaluation has not already been made by the ACOE as part of DERA (see Section 6). If such a study so indicates, the feasibility of stabilization should be investigated. If stabilization is not feasible, recording of the structure should be undertaken prior to cleanup.
6. A marker should be placed in the vicinity of the bomber air strip commemorating the historical and engineering significance of Shemya.
7. The shore defense emplacements should be identified, documented and, if appropriate, stabilized and marked.

5.3.39 Sitka

Background. Founded in 1806, Sitka was the seat of Russian government, business and settlement in North America. It was also the site of the transfer to the US by Russia following the purchase of Alaska in 1867. The Army and Navy were intermittently stationed in Sitka, the Navy maintaining a Marine barracks and a coaling station there. Both were closed in 1912, though the Navy maintained a radio station from 1907-1931. Sitka was designated an Advance Naval Seaplane Base in 1937, to service PBY patrols operating out of Seattle.

In 1938, the Navy's Hepburn Board recommended the construction of facilities at Sitka, Kodiak and a third site (Dutch Harbor was selected later). A total of \$15 million was appropriated, and Contract NOy-3570 was negotiated with Siems Drake Puget Sound, a consortium consisting of Johnson, Drake and Piper Company, Inc., Siems Spokane Company, and Puget Sound Bridge and Dredging Company. A total of 30 projects were authorized for Sitka. Construction began in 1940, but the Greenslade Board recommended additional projects in May, 1941, which were incorporated into the existing plans. The Army and Navy negotiated a deal by which the Navy's contractor would construct Army protective garrison facilities. Because Army facilities were added later, they had to be squeezed in wherever space was available, resulting in less than optimal siting. Sitka was also planned using pre-war building types and layouts, which were ill-designed for defense.

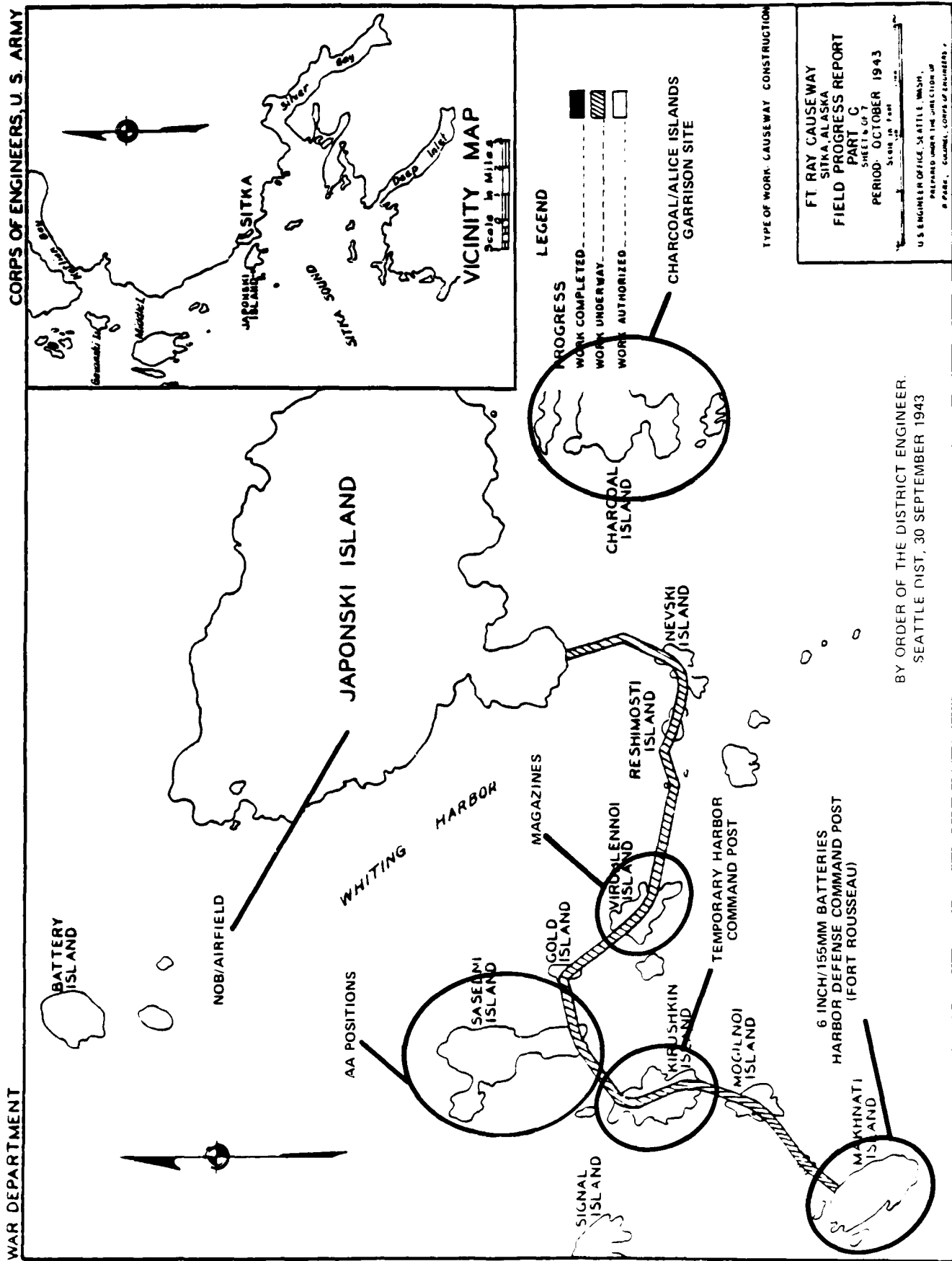


Figure 5-31. SITKA

Construction presented problems. As one of the oldest and most heavily occupied areas of European settlement in Alaska, Sitka posed the initial problem of clearing the site which had second growth timber interspersed with stumps from earlier logging. The cleared timber was essentially unusable but had to be disposed of. This was done by burning it with old tires. Muskeg had to be stripped and rock quarried for fill. The terrain was steep, with few areas of flat land available. Finally, contractors dug through cultural resources including remains of battles between the Russian colonists and the local Indians (Siems Drake Puget Sound n.d.).

The Army post construction began in January, 1941, on Charcoal and Alice Islands, adjoining the main Navy facilities on Japonski Island. Facilities were to be constructed on Kirushkin, Sasedni, Virublennoi, Makhnati, Gold and Reshimosti Islands. These were a series of small outcrops scattered to the south and west of Japonski Island. It was decided to connect them with a rock causeway. Housing was crammed onto Charcoal, Alice, Kirushkin, and Sasedni Islands, the latter two separated from the mainland by almost three-quarter of a mile of narrow, unstable causeway. In addition, they were separated from the main base by magazines on Virublennoi Island, which could explode in an attack, isolating the troops in indefensible, close quarters. The Army post was named Fort Ray, after Lieutenant P.H. Ray, a Gold Rush era unit commander.

The Navy, meanwhile, upgraded Sitka to the status of Naval Operating Base (NOB) in July, 1942, with air, radio, stores and repair facilities, Marine barracks and facilities to handle combat vessels. The airstrip was a concrete runway 1500 x 170 ft. The available area was so restricted that catapult launching and arrestor hook landing assist facilities as on an aircraft carrier were installed to allow use by Navy combat aircraft.

The primary mission of Sitka was to protect shipping in the Gulf of Alaska as well as to provide a strong point along the West Coast of Canada and southeast Alaska. While Japanese submarine reconnaissances along the West Coast of the US were enough to make defenders nervous, no actual threat ever developed, and the focus of the war in the Northern Pacific quickly established itself in the Aleutian Islands, far to the west. The facilities at Sitka were quickly bypassed by active military operations. Army facilities were approximately 70 percent complete by the end of 1943, at which time authorized troop strength was cut back from an extant 3300 to 1400 in all categories (including coast defense and outpost sites). In April, 1943, the Navy terminated the Siems Drake Puget Sound contract, replacing civilians with Seabees to finish up such projects as were to be completed. The contract workers were withdrawn by the end of March, 1943. The Seabees left in June, 1943, leaving work to proceed as it could, though most work was essentially of a maintenance nature. The Navy downgraded the NOB to a Naval Air Station.

One series of projects which acquired a life of its own was the elaborate coast defense construction program, planned in 1941, and officially authorized and begun in May, 1942. Fixed 6 inch batteries were located at Biorka Island (Fort Pierce), Makhnati Island (Fort Rousseau) and Shoals Point (Fort Babcock), with 90mm anti-PT-boat (AMTB) installation at Whale Island and Watson Point. Searchlight and fire control stations were built at various locations on Olga Point, Ataku Island, Charcoal Island, Kasiana Island, St. Lázaria Island, Lava Island, Kita Island, Kayak Island, Clam Island, Whale Island, Lisianski Peninsula, Indian River, Little Biorka Island, Golf Island,

Hill 800, Cape Edgecombe and Lisianski Peninsula. SCR-296 surface vessel radars were installed at Biorka Island, Abalone Island and St. Lazaria Island, with an SCR-582 harbor defense radar being emplaced first on Biorka, then subsequently moved to Hill 800 (on Kruzof Island) and finally to Makhnati Island. An SCR-271 radar was emplaced at Mount Edgecombe/Harbor Mount in 1942. As of August, 1943, the coast defense program was only 70 percent complete, with completion anticipated for July 1944.

The Navy deactivated Sitka in June, 1944, by which time the Army had essentially placed its facilities on a caretaker basis. The entire facility was transferred to the Alaska Native Service in August, 1946.

Facilities Description. Several features of note were constructed at Sitka. One was the rock core and faced causeway 8000 ft. long connecting the various portions of the Army facility. The construction at both Army and Navy sections was largely accomplished by contract troops using standard mobilization building plans. A full array of post services was constructed (bakery, laundry, dry cleaning, repair shops, hospitals, a library, theater and post exchange), five separate water systems, a sewage system, electrical distribution system, ferry slips (Baranof, Alice Island), pier and docking floats (Alice Island), and a series of docks (150 x 40 ft. at Biorka, 220 x 40 ft. at Shoals Point and 300 x 15 ft. at Whale Island). The Navy built housing for 2700, while the Army had housing for 3300. There were fuel dumps for 82,000 barrels of fuel oil, 15,000 barrels of diesel, 400,000 gallons of aviation gas and 105,000 gallons of gasoline. Seaplane facilities included two 186 x 254 ft. hangars and three ramps, with a landplane concrete runway 1500 x 170 ft. (plus the catapult/arrestor hook facilities noted above).

Present Conditions. Sverdrup & Parcel and Associates, Inc. performed an inventory survey of various areas of the World War II Sitka facilities for the ACOE in 1985, noting the following types of World War II remains: Harbor Mountain - concrete foundation slabs, retaining wall, lookout tower; Watson Point - below-grade concrete bunker, six Quonset Huts, wooden structure; Sitka - National Guard armory (condemned); Reshimosti Island - vehicle, dump, two wooden structures, miscellaneous debris; Virublennoi Island - three concrete ammo bunkers, dump/miscellaneous debris, vehicle; Gold Island - wooden structure, concrete bunker; Sasedni Island - concrete bunker, four AA emplacements, two wooden structures, eight foundation slabs, fire hydrant/pipe, utility poles, miscellaneous debris; Mogilnoi Island - no construction, used as quarry; Makhnati Island - battery/fire control bunkers, two ammo bunkers, wooden structure/bunker, miscellaneous debris; Biorka Island - concrete bunker, five wooden structures, seven Quonset Huts, one foundation, tower, water tank, miscellaneous debris; Little Biorka - six wooden structures, two Quonset Huts; Charcoal Island/Alice Island - 37 buildings in use to be retained; Clam Island - three concrete structures, timber debris; Ataku Island - one bunker, five wooden structures, 10 Quonset Huts.

Other Related Concerns. Sitka is one of the largest settlements in southeast Alaska. The widely dispersed affected areas are held by a variety of owners: BIA, BLM, US Forest Service, US Navy, US Coast Guard, State of Alaska, and private. The state owns the causeway and connected islands; they are currently cut off by a jet runway constructed on fill. Charcoal and Alice Islands are being conveyed to Shee Atika, the Sitka Village for-profit native corporation. The World War II remains at Sitka consist largely of isolated

structures in various states of repair with the sense of the facility as an operating unit being heavily impaired, although specific constructions are of interest. The World War II facilities at Sitka have been formally nominated for NHL status. While no specific prehistoric or historic archeological sites are reported, the area is important for assessing Russian occupation and Native-European relations.

Management Recommendations

1. The Naval Operating Base (NOB) on Japonski Island should be documented, as it consists of prewar permanent construction. Of particular interest are the hangars, the seaplane ramps (exemplifying Sitka's patrol mission during the war), the piers, power plant, the concrete headquarters/communications building, gymnasium, mess hall, barracks, BOQ, married officers' duplexes and officers' club. Most of these structures have been altered by postwar use.
2. The Army garrison features have been largely demolished. Extant World War II era structures on Charcoal and Alice Islands should be evaluated and, if appropriate, documented. The main features of interest consist of the harbor defenses, built on a series of islands connected by a rock causeway. The causeway should be recorded. Surface remains on the islands consist largely of debris, however defense-related structures of interest include three reinforced concrete igloo type ammunition bunkers on Virublenoi Island, four concrete 20mm AA positions on Sasedni and an elaborate underground "temporary" harbor defense command port on Kirushkin. The final harbor defense command post, entrance control post and headquarters was Fort Rousseau on Maknahti Island, where there were two 6 inch guns, two 155mm Panama mounted guns, two magazines (still retaining evidence of camouflage netting) as well as various control structures. These facilities typify the military architecture of the period and the protective garrison role of the Army at Navy bases. The Maknahti Island facilities should be evaluated for architectural stability, restored if appropriate and a series of interpretive displays developed and installed explaining the function of coast artillery and the particular significance of Sitka. These islands are somewhat difficult of access, but are state owned and present potential sites for visitation.
3. Additional defense installations should be investigated via further documentary research and field survey, evaluated and recorded. A display explaining the entire Sitka defense network should be developed and installed at an appropriate location (Maknahti Island), the NOB area, or in the town of Sitka.

5.3.40 Skagway

Background. During the Klondike Gold Rush in 1897, Skagway at the head of the Lynn Canal, provided the main point of access for miners travelling up the West Coast and over the Chilkoot and White Passes to the Yukon. It surged in population and was a well-known center of frontier lawlessness. A

narrow-gauge railroad, the White Pass and Yukon, was hastily constructed in 1898. With the fading of the Gold Rush by 1900, Skagway became a minor settlement, serving as a transport node and port for the interior and as a tourism center.

With the coming of World War II, Skagway again became an important transshipment node for supply of the interior. A Civilian Defense Committee was formed after the attack on Pearl Harbor to monitor blackout compliance, serve air raid monitor/skywatcher duty, guard duty and conduct evacuation drills. With the decision to build the ALCAN Highway and CANOL Pipelines, Skagway's supply and transport role became critical. The Canadian government leased the White Pass and Yukon Railroad to the US government for the duration of the war as part of the joint agreement to construct the ALCAN and CANOL systems, and in October, 1942, the 770th Railway Operating Battalion assumed control over the rolling stock and remaining employees of the railroad. In 1942, the line moved over ten times the freight load it had handled the previous year.

Skagway once again became a boom town, populated largely by transients. The ramshackle buildings left over from 40 years earlier were refurbished and rented out as storage and housing. Still, this was inadequate to handle the volume generated, and several new facilities, primarily dock and port facilities were built. The military put up Quonset Hut and T/O buildings to accomodate its needs. Skagway also served as a communications node in the ACS and as a subcable landing site.

Skagway's primary contribution to the war effort was its role in the CANOL pipeline operation. The CANOL project, begun in 1942, was designed to develop petroleum reserves in the MacKenzie Basin, pipe the crude to Whitehorse for refinement, largely as aviation gasoline, and then pump it to Skagway for distribution to the remainder of Alaska. CANOL 1 (Norman Wells to Whitehorse) and CANOL 2 (Whitehorse to Skagway) were soon joined by CANOL 3 (Whitehorse to Watson Lake) and CANOL 4 (Whitehorse to Fairbanks). The refinery, purchased in Texas, was shipped by rail and ship to Skagway, then over the White Pass and Yukon Railway to Whitehorse. The CANOL 1 and 2 pipelines were in operation by mid-summer, 1943. However, the MacKenzie reserves were never sufficient to justify the system, and Skagway, rather than becoming a petroleum shipping port became a petroleum receiving port, from which oil was transshipped to Whitehorse, Watson Lake and Fairbanks. CANOL did lower transport costs from \$8.40/barrel to \$0.23/barrel, and functioned well as a distribution system, but was never viable as a supply system. It was closed down in 1945, and the equipment sold for scrap. Skagway, meanwhile, served as the main transshipment point, with tanks and loading facilities being developed. Skagway's role as a transport node continued until May, 1946, when the Army ceased to operate the White Pass and Yukon Railroad, withdrawing its last troops.

Skagway is significant within the World War II in Alaska historic context under the Transportation/Logistics theme as a transport hub. Its integral role in the CANOL project helped supply petroleum, especially aviation gasoline, to the interior. The operation of the White Pass and Yukon Railroad by the Army represents a minor miracle. The supplies provided by this route enabled the construction of the ALCAN Highway to proceed on the

optimistic schedule established for its completion. Skagway is also representative under the Native/Civilian Concerns theme as regards the impact of the war economy on the local civilian population.

Facilities Description. No detailed information is available concerning the nature of the facilities at Skagway during the World War II period.

Present Conditions. No specific information is available concerning the current status of World War II period facilities at Skagway, however, the town has grown since World War II, altering the configuration which existed 40 years ago.

Other Relevant Concerns. No prehistoric archeological sites are known for the immediate area of Skagway, but the core of the old town, dating to the Gold Rush era, is a National Historic District.

Management Recommendations.

1. World War II era remains should be evaluated for integrity, recorded and, if appropriate, assessed for National Register eligibility.
2. Commemorative markers and/or interpretive displays explaining the layout and significance of the CANOL Pipeline and the White Pass and Yukon Railroad during World War II should be developed and installed. Museum development, in conjunction with the Gold Rush era National Historic District, should be considered, since Skagway is an accessible population and transportation center and a potential site for visitation.

5.3.41 Tanaga

Background. Following the occupation of Attu and Kiska by the Japanese in June, 1942, the ADC ordered a reconnaissance of the central Aleutians to ascertain if and where the Japanese had established a presence and to seek sites for expansion of facilities to counter enemy moves. Colonel B.B. Tally made two reconnaissance flights which included Tanaga in June and October of 1942, recommending Tanaga as the optional site of an airfield (Bush 1944:426). Generals Buckner and DeWitt recommended that air facilities be constructed on Tanaga, and initially had the plan approved by the War Department. The Navy, based on surveys done in 1935, objected that Tanaga had poor anchorages and suggested Adak as an alternative. The Army argued that an airfield could be more quickly constructed on Tanaga and that it was a more effective site, being much closer to the Japanese. The Navy stated that such closeness would make the base even more vulnerable and refused to accept Tanaga as a primary site. The War Department accepted the Navy's argument, and Adak was chosen with plans being made for a subsidiary Army garrison on Tanaga to be occupied later (ONI 1945:53). Adak was occupied on August 30, 1942, with plans being made for a base there to accommodate 15,000 troops and Tanaga authorized for 5000 essentially to protect Adak. The ease and rapidity with which the airfield was built on Adak made the occupation of Tanaga a moot point (Conn et al. 1964:274).

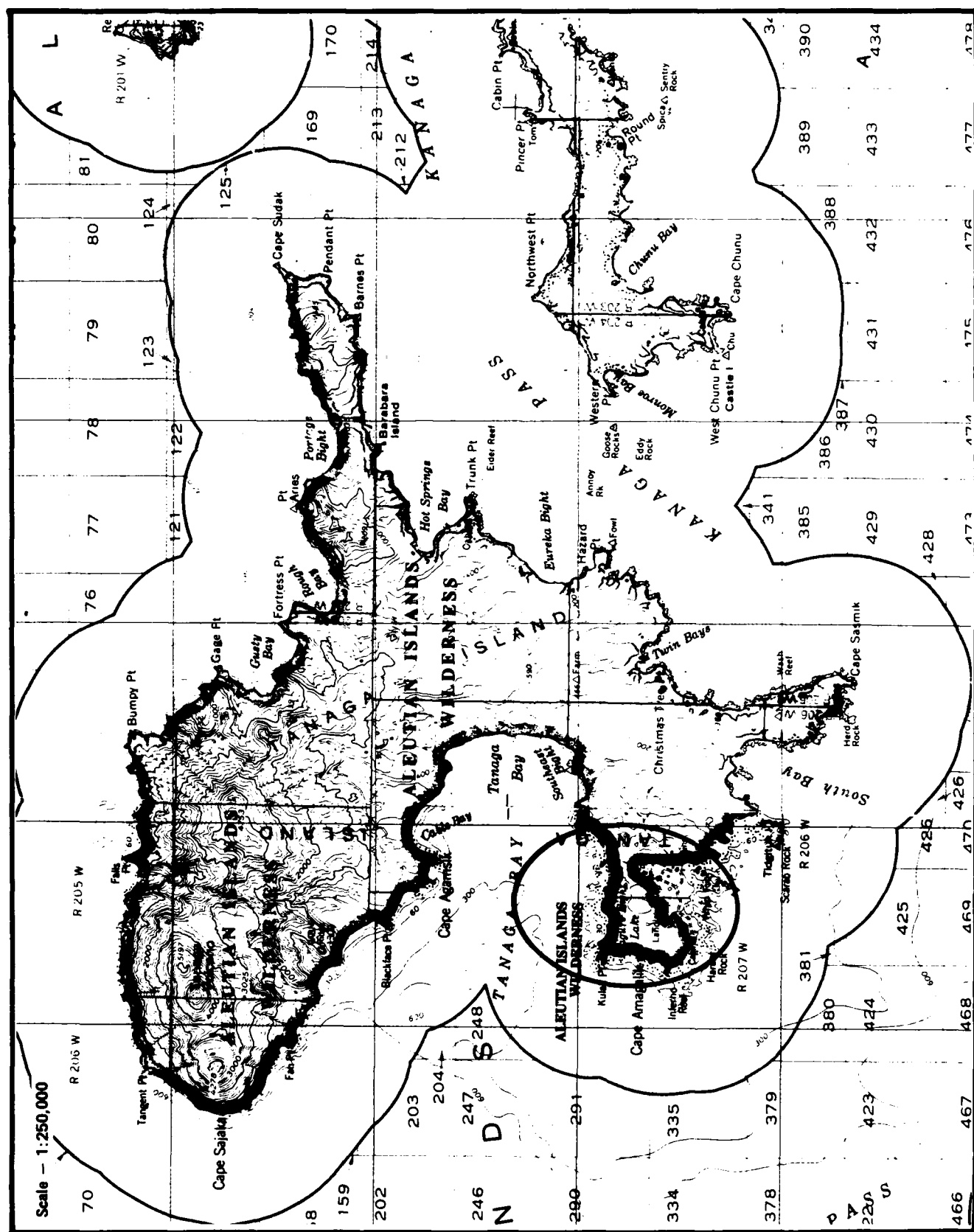


Figure 5-32. TANAGA

Tanaga was finally established as an emergency landing strip in July, 1943 (at the same time as Ogliuga, for which it served as the supply point). The ACOE was responsible for initial construction, with the Seabees taking over operation and maintenance in March, 1944, when it became a Naval Auxiliary Air Facility (NAAF). The first flight to originate from Tanaga was made in May, 1944. The facility was maintained until 1945, with the Army units departing in September, 1945, followed by the Navy units in October, 1945. The facility was not formally disestablished until January, 1951.

Facilities Description. Tanaga was organized around a 5000 ft. pierced steel plank runway with hardstands, taxiways, revetments, and banked shoulders with Bartow lighting. A TDM automatic weather station was installed, as was an SCR-270 AWS facility. Twenty gun emplacements of unspecified type were built as were a variety of other facilities. Warehouses, including refrigeration and cold storage facilities, a gymnasium, a mess hall, library/recreation hall, control tower (later destroyed by fire), repair shop, firetruck/ambulance garages, five ammunition sheds, generator sheds, Quonset barracks, and a water and sewer system with a 400 gallon steel storage tank. The installation of a dishwasher and washing machine was also reported. A 150 x 20 ft. ship dock was built at Lash Point, as were various roads. There was a plan for the construction of hanger facilities in February, 1945, but no record of their construction. The NAAF Tanaga War Diary notes the construction of a unique L-shaped garage made by joining two Quonset huts together by modifying the frame.

Present Conditions. ACOE (1977:37) inventoried 15 Quonset/Pacific type huts, five wood-frame structures, ten Quonset foundations, three communications towers, six generators, approximately 300 POL drums, runway matting and miscellaneous debris. The ACOE (1977:37) further notes vehicles including eight bulldozers, three graders, two scrapers, nine 10 yard dumptrucks, one 2.5 yard steam shovel, two downed aircraft, and ordnance including two .50 cal machine guns and two 20 mm cannons. USFWS (1985) specifies that the downed aircraft are an OA-10 (PBY) and a P-38, both of which crashed in October, 1946. The NAAF War Diary notes a B-25 which crashed in Tanaga Bay in August, 1944. and a JM-1 (Navy version of the B-26 Marauder) which crashed "on the island" in March, 1945, which may be potentially recoverable.

Other Relevant Concerns. A total of 12 archeological sites are known on Tanaga (McCartney 1972:24; Stein 1977:262-272; ACOE 1977:9). Stein (1977:262f) argues that archeological sites on Tanaga are significant for information they may yield concerning Aleut prehistory, adaptation and Russian-Aleut relations.

ACOE (1977:82) reports that Tanaga was apparently abandoned quickly, with large amounts of equipment being left in place. At one structure, table settings, including condiments were left in place, and a pool table and canned food were reported left as well. Ordnance, including .50 cal machine guns and 20 mm cannon and shells/shell cases (ACOE 1977:333, Figure 136) were left, as were a variety of vehicles and construction equipment including bulldozers, grades, scrapers, dumptrucks and a rare 1930's steamshovel. The NAAF War Diary also mentions a Bean crash truck, a 1600 gallon gasoline truck, and tractors. The same document also states that one (or more) "Weasels"

(amphibiuous jeep) were delivered to Tanaga for testing. Downed aircraft are present; USFWS (1985) and ACOE (1977:85) list an OA-10 (PBY) and a P-38, while the NAAF War Diary also lists a B-25 and a JM-1/B-26 at Tanaga.

Also noted in the NAAF Tanaga War Diary is a unique engineering procedure for runway repair. There was considerable settling of a fill along sections of the airstrip, with 1300 ft. being closed for extended periods due to subsidence. A series of POL drums was welded together end-to-end and used a roller for runway matting. Segments of up to 150 ft. could be "rolled up" on this spindle for work on the underlying fill. Later, runway matting was lifted by crane, sand was dumped on the top of the matting, and jackhammers were used to vibrate the fill through the mat to deposit it under the porous surface.

A final note is that apparently the landing field was rendered unusable, either as a tactical move or as an act of vandalism, by departing personnel, who drove trucks onto the runway in a staggered pattern at intervals to block the runway (ACOE 1977:82; 331-Figure 134; 332 - Figure 135).

Tanaga is part of the Aleutian National Wildlife Refuge, administered by the USFWS. Most of it is designated as wilderness. The twelve archeological sites reported on the island (TN 1-12) have been selected as 14(H)(1) sites.

Management Recommendations

1. The World War II facilities at Tanaga should be evaluated for integrity, documented and, if appropriate, assessed for eligibility to the National Register.
2. The main focus of the World War II facility was the airfield, a pierced steel plank surfaced strip, designed as an emergency landing field. The airstrip and associated features such as hardstands, taxiways, revetments and runway lighting should be documented. Attempts should be made to locate and document auxiliary facilities such as the AWS (SCR-271) installation and shore defense gun emplacement.
3. A large number of vehicles (including a rare prototype Weasel delivered to Tanaga for tests) and construction equipment are reported from Tanaga. Attempts should be made to locate these and they should be treated according to the recommendations made in Appendix D. Several downed aircraft are reported from Tanaga (including a rare JM-1, the Navy version of the B-26). Attempts should be made to locate these and they should be treated according to the recommendations made in Appendix C.

5.3.42 Ward Lake

Background. In December, 1941, the ADC ordered the evacuation of civilian contract and military dependents from Alaska. At this time the evacuation of all civilian personnel, especially native, was considered. The general consensus was that it would be inadvisable, as well as logistically unfeasible, to evacuate native peoples from their home territories.

Nevertheless, with the bombing of Dutch Harbor in June, 1942, emergency plans were made to evacuate Aleuts from the war zone west of Unimak Island.

In early July, 1942, the residents from Unalaska Island, were rounded up and placed aboard the S.S. Columbia along with Aleuts and BIA personnel from Biorka, Akutan, Nikolski, Kashega and Makushin Villages. These people were landed at Wrangell Institute in southeast Alaska on July 13, 1942, and transferred to an abandoned CCC camp at Ward Lake, near Ketchikan on July 17, 1942. The Biorka, Akutan, Nikolski, Makushin and Kashega residents eventually joined the Unalaska evacuees at the camp at Burnett Inlet, though Ward Lake was occupied by refugees until August, 1944, when it was turned over to the Army which in turn briefly used it as a camp until returning it to National Forest Service jurisdiction in October, 1944. The Aleuts were repatriated to the Aleutians in May, 1945, where they eventually dispersed to settlements at Unalaska.

The relocation site of Ward Lake is significant within the World War II in Alaska historic context, since it represents one of the few instances in American history in which US citizens were evacuated by federal authority from a broad war zone. It also represented a singling out of Native Americans for special treatment. Non-native personnel except BIA and USFWS personnel serving the Aleuts, were not removed, while all natives and persons with at least one eighth native blood were summarily ordered away. The evacuation was accomplished under difficult wartime conditions. The evacuees were allowed to take very little personal property and were provided with substandard living arrangements in an area where they had no contacts and which was radically different from what they were used to in climate and terrain. The evacuees experienced a high mortality rate due to poor health care, inadequate housing and subsistence, neglect and anomie. Their personal property was largely appropriated or damaged by military personnel and restitution was poorly administered and inadequately funded after the war. Their condition was not dissimilar to that of the Japanese and Nisei interned by U.S. executive order as potential enemies at about the same time. The experiences of the evacuation from the Aleutians was so traumatic that planned evacuation at Nunivak, St. Lawrence and other sites was cancelled.

Facilities Description. No information is known concerning the nature of the facilities at Ward Lake at the time of the evacuation in 1942.

Present Conditions. No specific information is available concerning the current status of facilities at Ward Lake.

Management Recommendations.

1. Ward Lake is one of four Aleut relocation sites. A reconnaissance survey should be made to locate, identify and evaluate the integrity of World War II era remains at the site. If no significant remains are located, Ward Lake should be dropped from the preservation management plan. If significant remains associated with the relocation camp facilities are located, Ward Lake should be documented, the remains evaluated for stabilization, and the site nominated to the National Register. A commemorative marker should be placed at the site.

5.3.43 Whittier

Background. In 1940, during the initial buildup in Alaska, it became evident that the port at the terminus of the Alaska Railroad at Seward was ill-suited to handling the necessary volume of men and materiel to develop and maintain military facilities on the mainland. The rugged terrain of the Kenai Peninsula left the rail line open to interdiction via weather problems, sabotage or enemy action, nor could the port facilities themselves be expanded to mitigate the bottleneck. Since the completion of the Alaska Railroad in 1923, an alternate route through Prince William Sound had been known, however, that route would require extensive tunneling. By April, 1941, it was decided to construct a cutoff with a ship terminal at the head of the Passage Canal at the site of Whittier, a small isolated maritime community.

The cutoff would join the main line at Portage at the head of Turnagain Arm at Mile 64 (from Seward), 50 miles from Anchorage. A surveyor's camp was opened at Portage in late April, 1941, with one being opened at Whittier in late May, 1941. In June, 1941, a contract was signed with the West Construction Company, with the final design being agreed upon in July, 1941. Work began on the roadbed that summer, with tunneling beginning in November, 1941. The two tunnel segments were holed through in November, 1942, six months ahead of schedule. The route involved building two miles of track across muskeg (near the Portage end) and three-quarters of a mile of track through solid bedrock near the south portal at Whittier.

There were two tunnels, one 1,910 ft. and one 13,090 ft. - at the time the fourth longest tunnel in the world (Bush 1944). The tunnels were rectangular in section (16 x 15 ft.) with a semicircular arched roof 16 ft. in diameter. The first train went through on provisional track in March, 1943, with the beginning of operations on completed trackage in June, 1943. While the tunneling ran ahead of schedule, the track work and port facilities construction (the latter begun in July, 1942) had run behind schedule due to contractor problems, shortages, isolation and extremes of weather. The average snowfall at Whittier is 260 in. (with an additional 174 in. of rain during the non-snow portion of the year, April to October) and temperatures to 30 degrees below zero with gale force winds. Because the line was on a grade, water had to be pumped from the tunnel, and condensation and blowing snow froze at the north ends of both tunnels to a distance of 2000 ft. in length and three ft. thick, with icicles three ft. in diameter and 15 ft. long forming from the roof (Bush 1944:377-378). The ice required two months of forced-draft heat application to thaw in order for work to proceed. Snow sheds were subsequently constructed at tunnel entrances. The West Construction Company was awarded an Army/Navy "E" for bringing in the tunnel ahead of schedule, though Talley (n.d.) indicates there were numerous contractor problems and delays.

The port and cut-off began operating in the Summer of 1943, despite the lack of port facilities. The first diesel locomotives used by the Alaska Railroad were acquired and used on this line (engines #1000 and #1001) (Cohen 1984:111). Although extensive harbor defenses had been planned to protect Whittier, by the time it was in place the war had moved out the Aleutian Chain to an extent that made such emplacement unnecessary. There is no indication

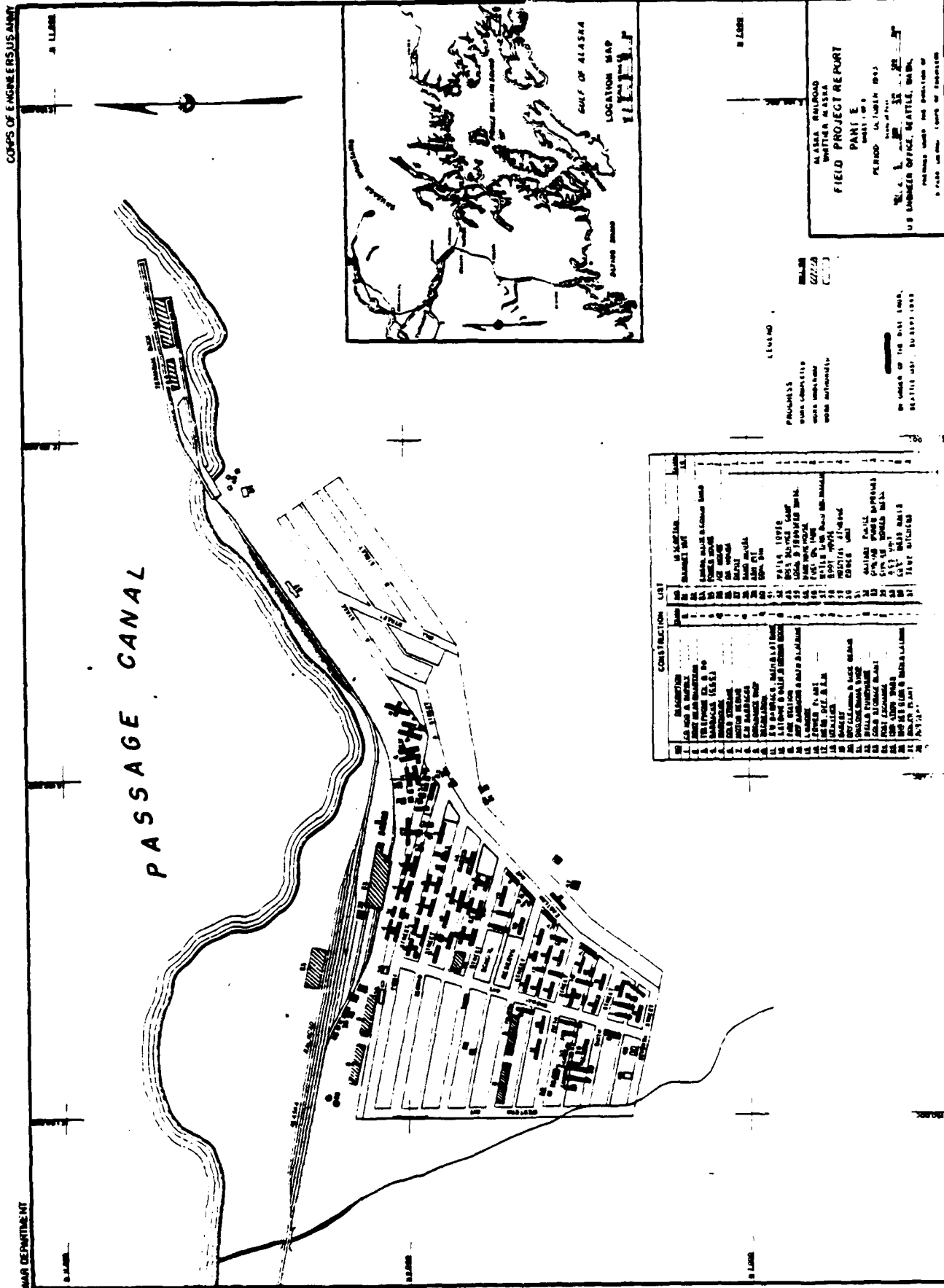


Figure 5-33a. WHITTIER

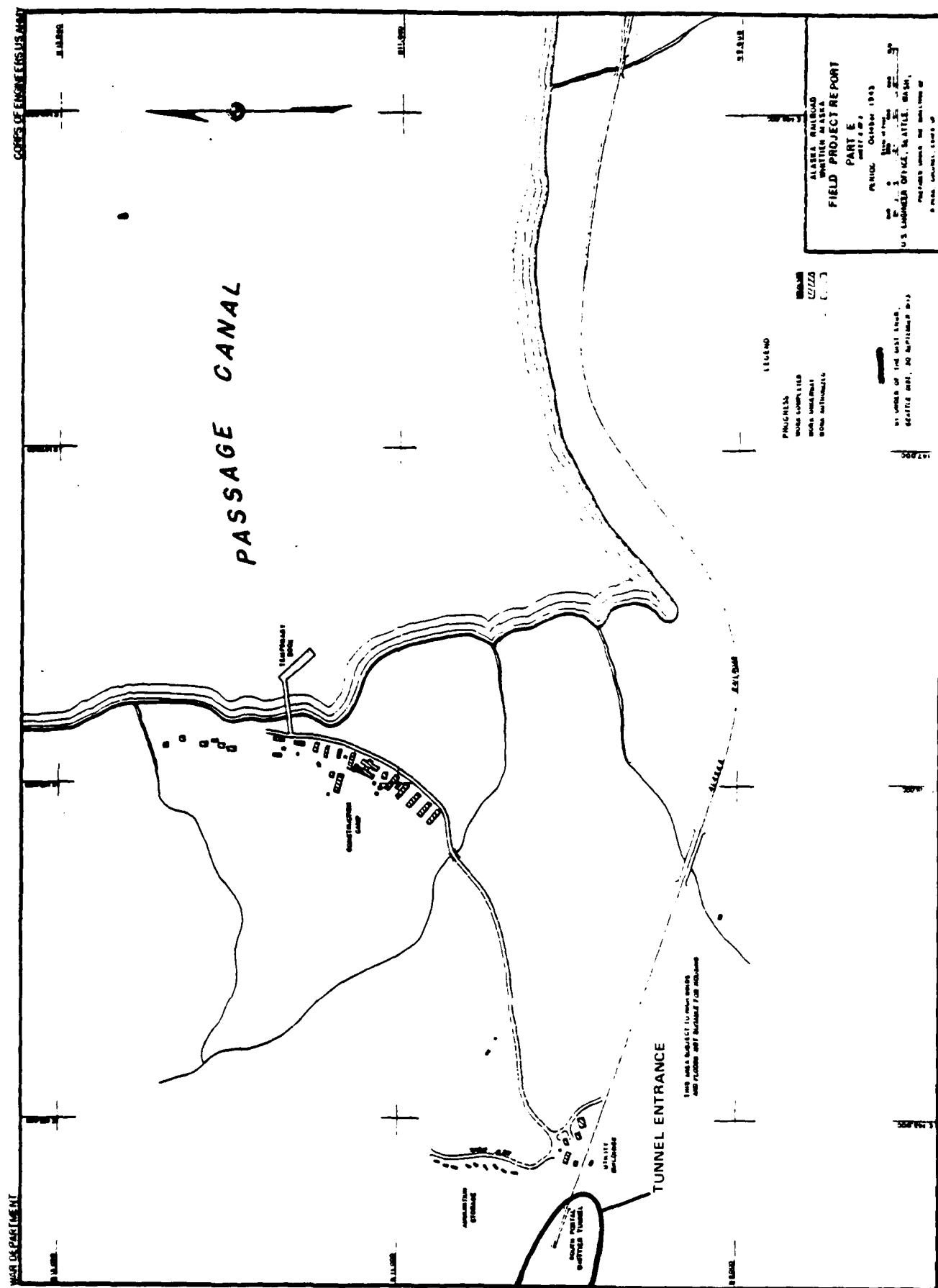


Figure 5-33b. WHITTIER

that they were built. Studies were made on the feasibility of making Whittier a petroleum depot with a pipeline following the cutoff to serve Fort Richardson, but this was not pursued until after the war.

The Army operated the port and the cut-off until it was declared surplus in 1945, and turned over to the Alaska Railroad, which operated it until April, 1946, when it was closed. The Army resumed off-and-on operation from 1946 to 1948, when it permanently reopened the port and began developing facilities. The petroleum depot was constructed in 1952, as was the reinforced concrete complex, the Buckner Building, to house the created community. The 14-story Hodge Building was added in the mid-1950s. The Army continued to operate Whittier until 1960, when the Alaska Railroad took over operations. Whittier now serves as a marina and Alaska Marine Ferry terminal.

Whittier is significant under the Transportation/Logistics theme with subsidiary significance under the Cold Weather Adaptation/Engineering and Allied Military Operations themes. Without the spur of military necessity occasioned by the war, the project would probably never have been built, but its building was factored into strategic logistical equations in the planning of the war effort in Alaska. It's construction, carried out on a schedule in mid-winter, was extremely difficult. While little in the way of specific engineering innovation was brought into play, the difficulties of cold-weather construction exemplify the problems of Alaskan wartime construction and operations. The development of the transportation facilities significantly altered the transportation and supply system for Alaska.

Facilities Description. The main features at Whittier were the track line, the tunnels and the port facilities. The construction included a terminal dock, warehousing, cold storage, spur trackage, rail repair facilities, cooling facilities, sand storage, oil storage, sorting yards, a terminal, coach and engine houses, powerhouse/heating plant and shops. The dock, completed in May, 1943, was of creosoted pilings on a deposited gravel base; it had depressed tracks and a 70-ton stiffleg derrick. In addition, there were housing, utilities, section houses, messhalls, recreational facilities for railroad construction and military personnel. T/O structures and hut-type constructions were used exclusively during the war, with housing, including a 50-bed hospital, being built on the Alaska Railroad designated town site. A gravity fed, concrete-dam water system, supplemented by two wells and a salt-water fire protection system were built (Bush 1944). The dock facilities were at the easternmost end of the area, with the townsite and railyards located in the bowl area just west of those facilities. The construction camp, temporary dock, landing strip and ordnance storage was located further west at the head of Passage Canal and near the south portal of the tunnel. There was also sawmill and gravel pit operations in this sector. Facilities were designed for 1150 personnel.

Present Conditions. Very little remains at Whittier which dates to World War II. Part of the original construction camp area, including sawmill and gravel pit operations is extant, though the majority of this area has been altered by the construction of the petroleum depot there in 1952. Virtually nothing remains in the main town area. ACOE (1985) identifies wood shacks at the gravel pit, sawmill structures, various reinforced concrete structures and miscellaneous debris used primarily as rip-rap to be cleaned up, some of which may date to World War II. The main townsite area showed no vestiges of the

World War II installation when surveyed by Envirosphere in Summer, 1985, and housing, utilities and port facilities all date to the post-war 1952 construction phase or later.

Other Relevant Concerns. There is no data regarding archeological information for the Whittier area, though the extensive alteration experienced in the area during construction of the cutoff and in the post-war construction phase makes the likelihood of recovering such materials problematical. It is doubtful that planned cleanup activities will impact archeological resources. In 1953, fire destroyed much of the extant dock facilities, which were rebuilt in 1957. Whittier was also severely damaged by the 1964 earthquake. It is currently a major link with Valdez on the Alaska Marine Ferry and a boat basin with a small permanent population. It is readily accessible via ferry and rail.

Management Recommendations.

1. No material remains of any significance exist from the World War II era. It is recommended that interpretive displays dealing with the construction and operation of the Whittier cutoff be developed. These would be displayed at either the Alaska Railroad depot or at the local museum in the Hodge Building.
2. Because of their architectural features and their historic significance as examples of the military's Cold War role in Alaska and its attempts to design a self-contained cold weather domestic environment at its installation, the Buckner and Hodge Buildings should be documented and recorded and nominations to the National Register pursued.
3. Because of its historic significance in the World War II in Alaska historic context, transportation/logistics and cold weather engineering themes, the Whittier Cutoff, including the tunnels, should be documented and recorded and a nomination to the National Register pursued.

5.3.44 Yakutat

Background. During August, 1940, the CAA was asked to survey airfield sites in Alaska with military use in mind. CAA construction of radio range facilities had begun at Yakutat in June, 1940, and it was decided to build an airfield capable of supporting combat aircraft operating in the Gulf of Alaska as well as those being ferried between the continental US and Alaska. ACOE construction troops were diverted from the Annette Island project to Yakutat in October, 1940. The troops and civilian personnel were housed in a cannery at Yakutat operated by Libby, McNeill, and Libby, which was not in operation during the off-season. The narrow gauge Yakutat and Southern Railroad was refurbished and used to haul personnel and supplies to the main airfield site.

Construction was difficult due to saturated muskeg which was difficult to strip with conventional equipment. Bulldozers were used, but progress was painfully slow. Weather - up to six inches of rain in a 24 hr. period during summer and heavy snowfall in winter - also slowed work, as did lack of

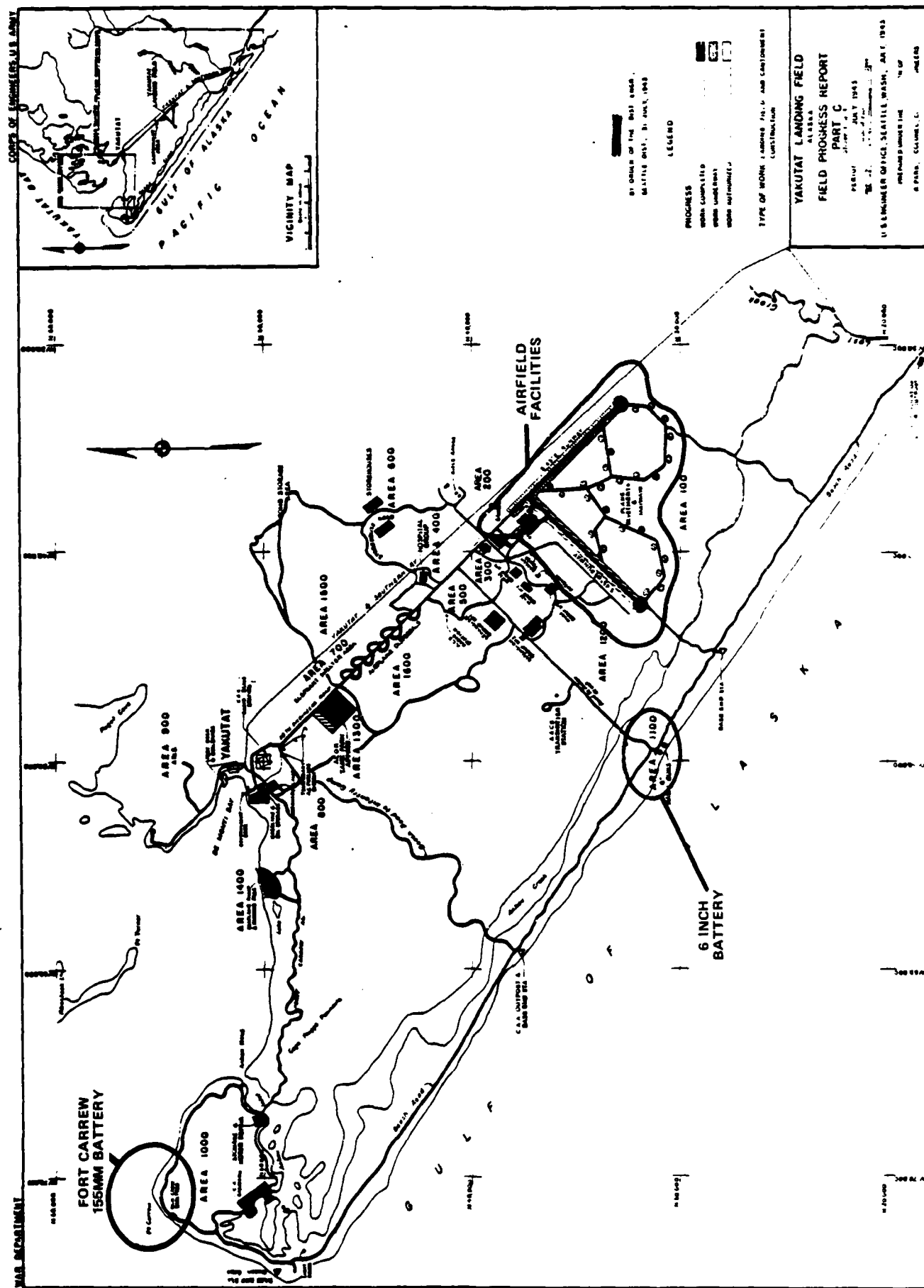


Figure 5-34. YAKUTAT

supplies. Drainage ditching was required to lower the water table and at one time a series of tidal gates similar to what was constructed at Adak's Sweeper Cove was discussed. On the other hand, there was abundant local timber for construction and camouflage.

In May, 1941, ACOE construction troops were transferred to Yakutat to speed up the pace of construction. By early fall, 1941, Yakutat was operational and most critical facilities were in place. In September, 1942, the Navy authorized construction of a seaplane facility at Yakutat to be built by the Army. An Aircraft Warning System (AWS) installation was planned for Yakutat, and emplacement facilities for an SCR-271 unit were prepared, but the equipment was diverted elsewhere. When the war broke out, Yakutat was ready, but had no aircraft assigned. It served as a minor ferrying post and the temporary station of RCAF squadrons in the Southeast, but apparently never had aircraft based there. In December, 1943, Yakutat, along with every air facility east of Adak except Elmendorf, was placed on airdrome reserve status after the Japanese were expelled from the Aleutians and Alaska was discounted as an invasion route. It was maintained on caretaker status until the end of the war. The Navy withdrew in June, 1944, but the facility was not closed until 1949, when it was turned over to the CAA.

Yakutat is significant in the World War II in Alaska historic context not so much because of the secondary role it played in the Allied Military Operations theme, but because of its role as one of the first airfields built in Alaska (Cold Weather Adaptation/Engineering theme). The lessons learned regarding equipment and construction techniques were applied to operations in forward areas throughout Alaska. The handling of muskeg construction, the adaptation of steel truss hangars (dubbed Yakutat hangars after their first emplacement site), the adaptation of Yakutat Huts (referred to by the ACS as a wooden structure which could double as a chicken shed), and the adaptation of Quonset and Pacific Huts for weather protection and excess snow loading (in the winter of 1943, Quonset Huts at Yakutat collapsed under a load of 27 in. of snow).

Facilities Description. Two concrete-surfaced runways 7500 ft. in length were built, as were hardstands, taxiways and revetments. A steel truss hangar (the prototype Yakutat hangar) with steel supports and siding was also constructed. Housing, services and utilities for a garrison of 2,200 were also built, as were a fuel dump, storage and shop facilities. Dock facilities were built, as was the Navy seaplane ramp, which was considered unique in its improvised construction using local timber and concrete block counterweights. Four 155mm Panama mounted rifles were constructed at Fort Carrew on the point approaching Yakutat. Later a naval 6 inch coast battery emplacement was built on the coast adjacent to the airfield. An ordnance storage area consisting of 75 Elephant shelters was also built, as was a hospital facility.

Present Conditions. An inventoried 180 Quonset Huts and 14 slab foundations, one tracked vehicle, one abandoned aircraft and assorted debris were recorded at Yakutat (USEPA 1978b). This appears to be a partial inventory of selected areas of the facility. Current status is unknown as DERA cleanup was completed in the 1985 season. It is unknown what structures dating to World War II have remained in use.

Other Relevant Concerns. The airfield is still in use, maintained by the FAA and served by scheduled commercial airline service. While no specific prehistoric or historic archeological sites are reported for the immediate area (the extent of construction disturbance makes it unlikely that sites would survive intact in the core area), de Laguna et al. (1964) note that the Yakutat Bay area is important for assessing Eskimo and Athapaskan influences on the development of Northwest Coast culture and protohistoric adaptation.

Management Recommendations.

1. A field reconnaissance should be made to ascertain if any World War II remains are extant following the DERA cleanup. If such remains exist, they should be documented. Of particular interest is the airfield, one of the first military airfields built in Alaska, along with its hardstands, taxiways, revetments and hangars (the first temporary steel hangar erected in Alaska was at Yakutat, lending its name to the type of hangar elsewhere in Alaska). These features should be documented and a marker and/or interpretive display installed. The 155mm battery at Point Carrew and the 6 inch Navy coast defense battery should be documented, with consideration given to restoration as a monument.

6.0 RECOMMENDATIONS FOR A DERA CULTURAL RESOURCES MITIGATION PLAN

This section presents a series of generic and site-specific recommendations which will, if implemented, result in the avoidance or mitigation of adverse effects to cultural resources which might otherwise result from the Defense Environmental Restoration Account Project. This section is specifically intended to respond to the stipulation of the PMOA between the ACHP, ACOE, Alaska SHPO, and NPS which called for "recommendations as to which World War II properties should (a) not be subjected to cleanup; (b) be subjected to partial cleanup only; (c) be subjected to cleanup only after recordation, data recovery, or other forms of mitigation, (d) be subjected to cleanup under specified conditions, and (e) be subjected to cleanup without conditions."

Background on the legislative and administrative history of DERA was summarized in Section 1.0. Section 6.1 presents generic recommendations which do not relate to any one specific site but which are applicable to all or several sites included in the DERA program. Where exceptions to these recommendations are deemed appropriate, they are noted along with site specific recommendations in Section 6.2. Information of which sites are eligible for inclusion in the DERA project was obtained primarily from computerized inventories provided by the ACOE (Anchorage).

It should be noted that the DERA program does not include restoration of Canadian sites.

6.1 Generic Recommendations for the Mitigation of Adverse Effects to Cultural Resources Resulting from DERA-Related Activities

Recommendations in this section are based on available data regarding a) the nature of DERA activities as described in ACOE (1977) and b) site specific data available to EnviroSphere.

For sites recommended for potential inclusion in the presentation plan for the World War II in Alaska historic context (Table 5-1) and which are also included in DERA the following recommendations should be implemented:

1. At least one cultural resources specialist should be on every ACOE inventory crew. This individual should have a level of training in prehistoric and historic archeology, historical (preferably historical military) architecture, and be familiar with the historical context, to a degree that allows him or her to identify situations in which specialist involvement is needed during the development of Final Design Analyses.
2. Where specialist involvement needs are determined, the participation of appropriate specialists(s) should be required in preparation of the Final Design Analysis.
3. A cultural resources specialist should be present on site to monitor cleanup activities at all major cleanup areas. Such cultural resources personnel should have qualifications in prehistoric and historic archeology. This individual should have the authority to stop work involving the activities immediately disturbing cultural resources. This recommendation is felt to be necessary because significant cultural resources not associated with World War II are known to be present in

some DERA areas. Additional, as yet unknown resources can be anticipated. Most of these additional resources are expected to be archeological in nature. Given the nature of archeological survey methodologies, unanticipated discoveries may be made even in areas which have been the subject of pre-DETA cultural resources studies.

4. Development of, and funding for, the oral history program recommended in section 5.2.2 although desirable is outside the scope of the DERA program. By its nature, such a project could not be confined in scope to DERA sites only and would benefit the full preservation plan presented in Section 5.

The following recommendations should be implemented for all DERA sites, whether or not they are included in the proposed preservation plan.

1. The preparation of Requests-for-Proposals (RFPs) and Bid Documents for final design analysis and actual debris removal contract should involve the participation of a cultural resources specialist. All such documents should be reviewed by ACOE cultural resources personnel.
2. The appropriate qualifications for cultural resources personnel included in DERA related activities should conform with the professional standards outlined in AR 420-40 (Appendix C).
3. At sites where no cultural resources specialist is employed, there should be a specific individual designated as responsible for cultural resources-related matters. The Resident Engineer (RE), his designee, or the individual charged with overseeing environmental compliance at the worksite are appropriate candidates for this responsibility. The designated individual should be instructed in the nature and type of cultural resources (both prehistoric and historic) anticipated to be found due to accidental discovery in the area due to DERP activities. The individual should also be familiar with the historic context in order to recognize unanticipated World War II materials which may be significant and should be recorded.
4. Contractors should immediately report all unanticipated World War II and other cultural resource finds to the ACOE Contracting Officer.
5. Remains of downed aircraft and vehicles should be treated according to the procedures outlined in Appendices C and D.
6. Areas identified as contributing to historic preservation planning (Section 5.0) should be off limits to contract personnel during DERA activities.
7. Contractors should advise personnel of the prohibition on souvenir collecting, "relic hunting" and disturbance of resources in the area of performance of the contract.
8. Subject to Federal Acquisition Regulations requirements, and approval by ACOE counsel, bid documents should specify that contractors stipulate that contractor personnel violating 6 and 7 above are subject to immediate termination.

9. Extraneous ground disturbance in the course of disposal and other DERA activities is to be avoided to limit damage to cultural resources.
10. Debris should be disposed of at existing landfills, dumps, etc. where feasible. When on-site disposal is required, such should be effected within the confines of the original installation (this keeps the materials localized and limits their presence to areas which are already disturbed to minimize the potential of disturbance of other cultural resources). Disposal should also avoid known and potential cultural resources within the installation confines. If this is not feasible, areas which have been previously disturbed (such as borrow areas, quarries, etc.) should be used for disposal, providing their use creates no environmental or safety hazard.
11. If borrow or fill is required for any reason during the course of DERA activities, the area should be surveyed by a professional archeologist, prior to use unless it can be demonstrated that the area has already been disturbed to a depth greater than that projected for excavation.
12. Disposal in coastal areas is to be avoided, especially in the Lower Alaska Peninsula and Aleutian Chain, since such areas have a high probability of containing prehistoric archeological sites.

6.2 Site Specific Recommendations for the Mitigation of Adverse Effects to Cultural Resources Resulting from DERA-Related Activities

6.2.1 Adak

1. Adak is recommended for partial cleanup only.
2. Since original remains of the World War II airfield at Sweeper Cove are no longer extant, the Albert Merrill field Navy dispersion airfield area should be preserved as an example of a pierced steel plank forward air facility and avoided during the cleanup. Any structures removed in this area should be recorded and demolished only if they are structurally unsound. Cleanup should consist of removal of loose debris with no on-site disposal and minimal use of heavy equipment.
3. Cleanup in the Zeto Point area should be restricted to cleanup by hand of loose debris.
4. The joint Army/Navy headquarters facility at Adak should be identified and preserved as it represents a unique and historically significant property type exemplifying Allied Military Operations in Alaska in World War II.
5. The ACS area should be avoided unless and until the recommended investigation (see section 5.3.1) of the reported murals at the enlisted men's dayroom can be undertaken. Cleanup, aside from hand removal of loose debris, should not occur prior to this investigation, but may proceed if none of the materials are located.

6. The Adak Depot area should be avoided unless and until the recommended investigation of transit sheds involved in the August, 1944, visit by President Roosevelt can be undertaken. Cleanup, aside from hand removal of loose debris, should not occur prior to this investigation.
7. The net depot at Finger Bay is indicative of the passive harbor defense facilities installed at Adak and should be preserved. It should be avoided except for hand removal of loose debris.
8. The archeological sites noted in Section 5.3.1 should be relocated prior to cleanup and restricted and monitored during the cleanup program to assure that they are not inadvertently disturbed. Special care should be taken that known, suspected and high potential areas of prehistoric occupation be avoided as sources for fill and/or spoil disposal.

6.2.2 Agattu

1. Agattu was the site of observation posts used by both Japanese and American forces during World War II. It is anticipated that sub-surface remains associated with one or both of these occupations may be extant and, if so, would be significant as examples of these property types. Remains of the Japanese tent camp, in particular, could yield information on day-to-day activities and lifeways of Japanese troops at small outposts. Because the exact locations of the outposts are not known, no cleanup involving ground disturbance should be undertaken at Agattu. Cleanup should be restricted to removal of POL drums and loose debris as these represent clear environmental hazards (cleanup of the latter should be accomplished by hand).
2. Agattu is uninhabited and for this reason no removal of structures should be undertaken.
3. The remains of the extant PV-1 aircraft should be recovered and treated in accordance with recommendations in Appendix C. A single wrecked vessel is identified in the debris inventory for Agattu (ACOE 1977:43). It should be evaluated and treated in accordance with recommendations in Appendix D.

6.2.3 ALCAN Highway

1. If original segments of the ALCAN Highway located in the United States which were subsequently abandoned prior to post-war reconstruction are identified (see Section 5.3.5) they should be excluded from the DFRA project
2. Until such time as a detailed inventory of ALCAN-related debris is available more detailed recommendations can not be definitively made. However, preliminary evaluation suggests that unrestricted cleanup, except as noted above, may be appropriate.

6.2.4 Amchitka

1. Remains of military activity at Amchitka are potentially eligible for inclusion on the National Register. The structures which best exemplify the role of Amchitka are air facilities such as runways, hangars, aircraft revetments, and operations buildings, the jetty, the civilian construction camp and gun emplacements. Amchitka is considered a major component of the preservation plan presented in Section 5.0. For these reasons, unrestricted cleanup is inappropriate and not recommended.
2. For the three runways - the fighter strip, the main bomber strip and the auxiliary cross bomber strip - cleanup of loose debris only should be undertaken.
3. For the two hangars recorded as extant, there should be an evaluation of the structures by a structural engineer to determine whether they currently constitute an immediate hazard. In the absence of the preparation of such an engineering report or in the event that such a study indicates that no immediate hazard exists, both hangars should be left intact.
4. It is recommended that the extant aircraft revetments be left intact. The cleanup of loose debris in and around revetments should be accomplished by hand. Revetments should not be used for disposal purposes.
5. Structures associated with fighter airstrip - those located to the immediate north and west of that runway - should be left intact as representative of the initial occupation and early construction at Amchitka.
6. The Kirilof Point jetty is significant as an engineering attempt because it exemplifies the difficulties experienced in the Aleutians due to weather conditions, the construction being largely washed out. Stabilization and restoration of any extant portions of the jetty would serve no useful purpose and would not be cost effective. If appropriate, a preliminary engineering evaluation should be made to determine if leaving the remaining segments of the construction in place in its current condition presents engineering, safety and/or environmental hazards.
7. Remains of the civilian construction camp on the north side of Constantine Harbor should be left intact and access restricted during cleanup activities because of the site's relationship to the native/civilian theme and its research potential. Cleanup of this area should be undertaken only if investigations indicate the absence of above and/or below-ground remains associated with the civilian construction camp. In the absence of such an investigation or in the event that such an investigation demonstrates that materials are present, no cleanup should be undertaken in the area. During cleanup, the area should be restricted by posting.
8. The seven inventoried but unlocated gun emplacements (Panama mounts) noted in the ACOE (1977:39) report should be left intact.

9. In the disposal of cleaned up material, preference for disposal should be given to disposal at previously-disturbed areas, provided that such presents no environmental problems, e.g., existing borrow areas and/or quarry pits should be used if possible. In the event of the creation of new subsurface disposal areas, such areas should be minimized as to extent and number. If such excavation is required, survey by professional archeologists should be conducted to determine if prehistoric or historic cultural remains are present. Coastal areas should be avoided because of the high reported density of such archeological remains (McCartney 1977; Stein 1977).

6.2.5 Anchorage

1. The ACOF computerized inventory list of potential DFRA sites lists several within Anchorage. Only a limited number of Anchorage facilities were identified in Section 5.3.7 as potentially contributing to a preservation plan. In the absence of more detailed inventory information no final recommendation can be made regarding limits to DERA activities.
2. Because Anchorage is the principal population center in Alaska, World War II related remains would be particularly suitable for public interpretation. The ACOE should consult with the SHPO and NPS once detailed debris inventories are available to determine which, if any, potential DERA sites should not be subject to cleanup, or subjected to only limited cleanup.

6.2.6 Annette Island

1. As of 1985, a number of structures at Annette Island associated with World War II were still in good condition and several were being used. The draft inventory report for Annette Island (Sverdrup-Annette 1986) recommended that these structures "remain in place as is". We concur with this recommendation.
2. Structures modified for use by Canadian Forces not included under Item 1 (above) should be recorded at HABS/HAER levels 2, 3 or 4 depending upon the condition and uniqueness of the structure. Demolition may follow recording.
3. Several abandoned vehicles are noted in the debris inventory. These should be treated in accordance with recommendations in Appendix D. However, it appears likely that after initial evaluation they will not be considered significant. If this is confirmed they should be included in the cleanup.
4. Special attention should be given to marking and mapping significant structures and sites identified in Section 5.3.8. Once this is completed, cleanup of areas at Annette Island, (except as noted above) as recommended in the inventory report, may proceed. Cleanup under these conditions will not adversely effect significant properties associated with the World War II in Alaska historic context.

6.2.7 Atka

1. The most significant aspect of Atka in the World War II in Alaska historic context is the Aleut removal and destruction of the village. Although the village appears to be located outside the area slated for DERA cleanup, care should be taken that any remains in this area associated with the Aleut community be avoided during cleanup. If such remains are to be affected (DERA eligible and/or removal requested by Atxam Corporation), they should be recorded (Level 3 HABS/HAER) prior to removal.
2. The main military site around the airfield is recommended for unrestricted cleanup, after Level 4 HABS/HAER recording.
3. The known aboriginal archeological sites in the affected area should be relocated prior to, and restricted during, cleanup operations. A professional archeologist should investigate all affected areas prior to cleanup to insure that archeological sites will be avoided during cleanup operations.
4. The ACS installation to the northeast appears to lie outside the area slated for cleanup. Because of its uniqueness as a documented ACS installation with various communications functions (ACS radio, submarine cable relay, AACS, radar beacon, radio range and weather reporting), it is recommended that this area be preserved with cleanup restricted to hand removal of loose debris.
5. Remains of at least three World War II era downed aircraft are present on Atka. These should be evaluated with regard to the recommendations presented in Appendix C, involving recovery.

6.2.8 Attu

1. Attu represents the single most significant site associated with the World War II in Alaska historic context. For this reason only partial cleanup is recommended.
2. Attu has potential for future archeological and historic investigation, and could potentially be developed for interpretation. For these reasons, cleanup should be limited (except as noted below) to removal of loose debris and POL drums. These activities should be undertaken in a manner that does not involve any ground disturbance. All extant structures should be left intact.
3. Cleanup should, however, include recovery of aircraft and vehicles (including those not within the already specified DERA areas). These should be treated in accordance with recommendations in Appendices C and D.

6.2.9 Big Delta

1. Details of the DERA cleanup at Big Delta are unavailable at present. Restricted cleanup is recommended. Cleanup should avoid areas noted as

significant in Section 5.3.11, i.e., the airfield and the ALCAN and CAA construction camps. Other areas to be cleaned up should be recorded (Level 4 HABS/HAER).

6.2.10 Dutch Harbor/Unalaska

1. The DERA cleanup has been completed on Amaknak Island which constitutes the core of the Dutch Harbor NOB/Fort Mears site. Future DERA work is planned for the Unalaska Valley (Moore 1986, personal communication). Features identified as significant in the Unalaska Valley area (see Section 5.3.18) include the cemetery site and the ACS bomb-proof gallery. These areas should be avoided.
2. If "outlying areas" include sites such as Cape Wislow, Cape Prominence, Eider Point, Constantine Point, etc. (see Sections 5.3.15 and 5.3.16), cleanup should be restricted to the removal of loose debris and features which are not structurally sound. The tramways at the AWS stations and the battery emplacements are considered significant and should be preserved if extant.
3. Given the overall significance of the Dutch Harbor NOB/Fort Mears installation and its subsidiary outposts and given the fact that cleanup has already been completed at the core facility, any subsidiary areas slated for cleanup should be recorded (Level 4 HABS/HAER) prior to demolition.
4. Because of the significance of the aboriginal archeological sites on Unalaska and the degree of destruction caused by military construction during World War II, as well as subsequent activities, special care should be taken that cleanup sites on Unalaska be field checked by a professional archeologist prior to cleanup as per the generic recommendations (see Section 6.1).

6.2.11 Cold Bay

1. DERA activities at Cold Bay are believed to be complete. If any future cleanup activities are contemplated they should be reviewed by the SHPO and NPS to ensure that such activities will be consistent with the preservation plan recommendations presented in Section 5.3.17.

6.2.12 Excursion Inlet

1. An inventory investigation was conducted at Excursion Inlet in 1985 by Sverdrup & Parcel and Associates, Inc. (Sverdrup-Excursion 1986), though the site was apparently not visited at the time. Representatives from land-holding entities stated that no military remains are extant. The only location for potentially extant materials is owned by the Excursion Inlet Packing Company, which stated that its personnel could not determine the exact dates of feature construction, that all structures were in current use and that it did not want to participate in the DERA program. Sverdrup recommends that no DERA restoration be undertaken. We concur with this recommendation.

6.2.13 Forrester Island

1. Reported World War II remains include concrete slab foundations (Sverdrup-Forrester 1986). As Forrester Island is part of the Alaska Maritime Wildlife Refuge and a nesting area for seabirds, the USFWS has stated that they do not wish any activities undertaken which would interfere with birdlife. Additionally, identified concrete grade-level foundations have been excluded from DERA activities. Sverdrup recommends that Forrester Island be excluded from DFRA. We concur with this recommendation.

6.2.14 Fort Glenn/Chernofski

1. Remains of military activity at Fort Glenn and Chernofski are potentially eligible for inclusion on the National Register. The preservation plan presented in Section 5.3.2.1 has identified Fort Glenn as a principal plan component. For these reasons minimum cleanup only is recommended for Fort Glenn. Such cleanup should consist of the removal of toxic and chemically hazardous materials that constitute an immediate threat to the environment. Loose debris should be removed only when it constitutes a present hazard and/or is clearly lacking association with its original context.
2. Where removal of toxic and/or hazardous material involves ground disturbing activities, care should be taken to insure that the generic recommendations noted in Section 6.1 are implemented.
3. With regard to the Birchwood Hangar located near the southwest end of Runway A, an evaluation of its current condition should be undertaken by a structural engineer. If such an evaluation indicates that there is an immediate danger of collapse, the ACOE should consult with the SHPO to determine if stabilization of all or part of the structure is feasible. If the hangar is found to represent an uncorrectable safety hazard, it should be demolished following Type 1 HABS/HAER recording.

6.2.15 Fort Richardson/Elmendorf Field

1. Specifics of DFRA cleanup for Fort Richardson/Elmendorf Field (AFB) are unavailable at present. Cleanup should avoid the features noted as significant in Section 5.3.22: the airfield and original revetments, taxiways and hangars; the original 11th Air Force Headquarter's building; and the Kashim.

6.2.16 Galena

1. Details of the DFRA cleanup at Galena are unavailable at present. Restricted cleanup is recommended. Cleanup should avoid areas noted as significant in Section 5.3.24, i.e, the airfield and the CAA construction camp. Other areas to be cleaned up should be recorded (Level 4 (HABS/HAER)).

6.2.17 Kiska/Little Kiska

1. Kiska is a designated NHL and a principal component of the preservation plan for the World War II in Alaska historic context. For these reasons only partial cleanup is recommended.
2. Because they are uninhabited, and because access is extremely difficult, Kiska and Little Kiska have essentially no potential for interpretive development. However, they may have potential as sites of future historic archeological and historic investigations. For these reasons cleanup should be limited (except as noted below) to removal of loose debris and POL drums. These activities should be undertaken in a manner that does not involve any ground disturbance. All extant structures should be left intact.
3. Numerous gun emplacements with guns are present on both Kiska and Little Kiska. Unless stabilized and conserved these items will continue to deteriorate. In-place preservation is not recommended because of their unsuitable location for incorporation into a future interpretive program. It is recommended that as part of DERA activities the guns be moved to a location where they can be incorporated into an interpretive display. Fort Abercrombie State Park (Kodiak) may be a suitable interim or permanent repository.
4. For the same reasons enumerated in items 2 and 3 (above) the remains of Japanese midget submarines should be evaluated and treated in accordance with the recommendations in Appendix D.
5. Remains of beached larger surface vessels should be examined and recorded. They should be included in the DERA program only if they are found to represent an environmental hazard. Other 'se, they should be left in situ.
6. Remains of downed aircraft known to exist on Kiska, although located outside the area designated for cleanup under DERA, should be included in DERA and treated in accordance with recommendations presented in Appendix C.

6.2.18 Kodiak

1. The DERA cleanup has been completed at the Kodiak USCG facility, which constitutes the core of the Kodiak NOB/Fort Greely site. Further work is to be done in the non-Coast Guard portion of the site, and RFPs for design are in preparation (Moore 1986, personal communication). Features identified as significant at Kodiak (see Section 5.3.28), including battery emplacements, should be avoided during cleanup except for the removal of loose surface debris.
2. Given the overall significance of the Kodiak NOB/Fort Greely installation and its subsidiary outposts and given the fact that cleanup has already been completed at the core facility, any subsequent areas slated for cleanup should be recorded (Level 3, HABS/HAER) prior to demolition.

6.2.19 Ladd Field

1. Specifics of DERA cleanup for Ladd Field (North Post, Fort Wainwright) are unavailable to date. Cleanup should avoid the features noted as significant in Section 5.3.29. These include the following original structures: Buildings 1047, 1049, 1051, 1045, 1021, 1024, 1541, 1562, 1560, 1555, 1561, 1542, 1543, 2106, 2077, 3005, 3008, 2085, Quarters No. 1 and Hangar No. 1. The in-ground utilidors and the original copper sheathing on some of the roofs should be preserved. None of these structures should be demolished unless a structural engineer certifies that they are dangerously deteriorated and cannot reasonably be restored. Should demolition or alteration of the utilidors be required they should be recorded at HABS/HAER Level 2.

6.2.20 Nikolski

1. Because of the importance and prevalence of prehistoric archeological sites in the area of Nikolski, DERA cleanup should proceed only following on-site investigation by a professional archeologist, as per the generic recommendations in Section 6.1.

6.2.21 Nome

1. Reported World War II remains listed in the debris inventory (Woodward-Clyde 1985b) do not involve significant aspects of the site at Nome as identified in Section 5.3.3. It is recommended that DERA activities proceed subject to the generic recommendations presented in Section 6.1.

6.2.22 Northway

1. The site debris inventory for Northway (Woodward-Clyde 1985a) indicates that very little in the way of World War II material remains are extant. The Alaska Department of Transportation has requested that the three standing frame structures at the site be saved for them to use in tests which will involve the destruction of the structures by fire. Northway should be subjected to cleanup providing the conditions specified below are adhered to.
2. Cleanup will involve excavation, grading and filling. A borrow pit is reported to exist; spoil should be removed from and deposited in the existing feature and the opening of other borrow areas should be avoided.
3. Care should be taken to avoid the original construction camp area to the northwest of the airfield.
4. Cleanup will also involve the revegetation of approximately one acre. Care should be taken that borrow for this project be taken from non-sensitive areas.

5. Woodward Clyde (1985a) reported no archeological remains were present at the site. However, no professional survey was undertaken, and Woodward-Clyde's evaluation should be confirmed by a professional archeologist prior to cleanup.

6.2.23 Point Barrow

1. The inventory for Point Barrow (Woodward-Clyde 1985c) indicated that the site of the radio station, the focus of settlement at Point Barrow, had been converted into a hospital and that military debris had been removed in the past. Military remains are present in the area, but as scattered debris lacking integrity. Point Barrow should be subjected to cleanup providing the conditions specified below are adhered to.
2. There are reports of debris in Elson Lagoon, some of which may date to the original operations to develop Naval Petroleum Reserve No. 4. Items noted include two landing craft and several examples of vehicles which may be Weasels. Attempts should be made to identify, recover, and treat these remains as per the procedures listed in Appendix D.

6.2.24 Pribilof Islands

1. The primary significance of St. Paul and St. George within the World War II in Alaska historic context identified in Section 5.3.35 involves the Aleut removal, regarding which there are no physical remains involved in DERA. Cleanup can proceed on an unrestricted basis on St. George and with the stipulation that the six 1 1/2 ton trucks at Site E-1 and the tracked vehicle at Site E-2 on St. Paul should be evaluated and treated as per the recommendations presented in Appendix D.

6.2.25 St. Lawrence Island

1. The areas slated for DERA cleanup are Gambell and Northeast Cape. Since no specific information has been recovered regarding World War II era facilities at either location, the areas to be cleared should be recorded (Level 4 HABS/HAER). Of particular interest at Gambell are the airfield (Site 8), the Sevoukak Mountain communication sites (Site 4) and tramway (Site 5).
2. At Northeast Cape, the AC&W/White Alice sites of the post-war era should be recorded (Level 4 HABS/HAER) prior to cleanup to provide information on layout and facilities at these installations.
3. Various examples of vehicles are noted on St. Lawrence Island (Gambell: Site 2 - potential buried heavy equipment; Northeast Cape: Site 14 - sled, backhoe, Site 18 - trucks, Site 19 - D6 cat). These should be evaluated and treated according to the recommendations presented in Appendix D.

6.2.26 Seward

1. The inventory of remains at Fort Raymond in the City of Seward (Sverdrup-Seward 1986) indicates that no significant remains of the World War II facility are extant. The current owner, the City of Seward, does not wish to have extant remains cleared, and Sverdrup recommends that the site be removed from DERA. We concur with this recommendation.
2. Of a total of eight scheduled inventory projects associated with the Seward Harbor Defense Sites, only three were available during preparation (Rugged Island, Resurrection Peninsula and Barwell Island). The State of Alaska owns the Resurrection Peninsula site, and has requested no cleanup. The USFWS manages Rugged Island (Fort Bulkley) and Barwell Island as part of the Alaska Maritime National Wildlife Refuge, and desires potentially hazardous/toxic waste removal only. Because of the significance of the facilities associated with the harbor defense sites, we concur with the Sverdrup recommendations that Resurrection Peninsula sites be removed from DERA and that only limited cleanup of potentially hazardous and/or toxic wastes be undertaken at Barwell and Rugged Islands.
3. No information concerning current status or DERA cleanup plans for Hive and Renard Islands, Fort McGilvray/Caines Head or Lowell Point sites is available. For these sites associated with harbor defenses, restricted cleanup, involving hand removal of loose debris only at actual defense facilities and Level 4 HABS/HAER recording of subsidiary remains which are to be removed is recommended.

6.2.27 Shemya

1. No information is available concerning current status of remains or DERA cleanup plans for Shemya. Limited cleanup is recommended for Shemya, with Level 4 HABS/HAER recording for areas to be cleaned up under DFRA.
2. A professional archeologist should examine areas to be affected by the cleanup prior to cleanup to identify archeological sites and high potential site areas. These would involve known prehistoric and/or historic sites and evidences of Japanese occupation. If such areas are identified they should be excluded from DERA activities.
3. Shore defense emplacements should be restricted to hand removal of loose debris during cleanup.
4. The Birchwood hangar should be evaluated by a structural engineer and avoided during the cleanup unless it is assessed as structurally unsound and stabilization is deemed unfeasible.

6.2.28 Sitka

1. The Sitka NOB should be cleaned up with restrictions. The seaplane facilities, hangars, headquarters/communications building, gymnasium, bachelor officers' quarters, mess hall, married officers' duplexes, and

officers' club identified in Section 5.3.39 should be preserved unless a structural engineer certifies that they are unstable and that stabilization is unfeasible. Denfeld (personal communication 1986) states that these structures represent the best preserved 700 series buildings in Alaska. These structures need to be evaluated and recorded. If appropriate, attempts should be made to reach an agreement with Shee Atika for their preservation and stabilization.

2. Thompson (1985g) and Sverdrup-Charcoal (1986) recommend that cleanup at Charcoal and Alice Islands garrison sites proceed in an unrestricted fashion (within the limits approved by the owners, Shee Atika). We concur with this recommendation.
3. The causeway-linked islands (Fort Rousseau) should be restricted to the cleanup of loose debris only. Structural remains should be preserved, which is the reported wish of the owner, the State of Alaska (Sverdrup-Fort Rousseau 1986).
4. The Kasiana Islands defense facilities should be restricted to the cleanup of loose debris. The owner, the State of Alaska, has requested that the group be dropped from DERA (Sverdrup-Kasiana 1986).
5. The Ataku Island defense facilities should be preserved except for subsidiary housing (collapsed hut-type structures), which may be removed. As the isolation and terrain at Akaku would require major disturbance to accomplish cleanup, if such an option is implemented, a professional archeologist should carry out a pre-cleanup survey to identify potentially significant prehistoric and pre-World War II historic remains.
6. The private owners of the Watson Point defense site have requested that the site be dropped from DERA (Sverdrup-Fort Ray 1986). They plan to grade the site for other purposes in the future. This was the site of a 90mm anti-motor torpedo boat battery (AMTB), Denfeld (1986) advises that it is no longer extant.
7. The owner of Harbor Mountain (US Forest Service) has requested that the site be dropped from DERA. The site should be recorded (Level 4 HABS/HAER) (Sverdrup-Fort Ray 1986).
8. The Alaska National Guard armory has been condemned and is being transferred to the Alaska Department of Natural Resources, which desires to have the structure removed (Sverdrup-Fort Ray 1986). We concur with this recommendation.
9. The battery remains at Fort Pierce, Biorka Island, should be preserved, with all battery features preserved and subjected only to hand removal of loose debris. Subsidiary facilities may be cleaned up providing they are first recorded at Level 4 HABS/HAER.

6.2.29 Skagway

1. No information concerning current status on DERA cleanup plans for World War II era facilities at Skagway is available. No specific significant physical remains were identified during this study. Unrestricted cleanup is recommended at Skagway with the proviso that Level 4 HABS/HAER recording should be undertaken prior to cleanup except as noted below.
2. If remains associated with the CANOL project and the operations of the White Pass and Yukon Railroad are identified, these should be recorded at HABS/HAER level 3 or 4, dependent upon their nature and condition.

6.2.30 Tanaga

1. No information is available concerning DFRA plans for cleanup on Tanaga although an RFP for design analysis is in preparation (Moore 1986, personal communication). The ACOE should, in conjunction with the Alaska SHPO, develop this RFP to assure that a level of data acquisition adequate for detailed historic planning is mandated.
2. Only limited cleanup is recommended for Tanaga, as it is reportedly the best preserved example of an Aleutian outpost extant (including typical structures with furnishings), offering the opportunity for research into the material concomitants of daily life in the Aleutians during World War II. The bias in cleanup at Tanaga should be for preservation in view of its uniqueness and research potential.
3. A minimum of Level 3 HABS/HAER recording of facilities with a detailed inventory of a sample of furnishings and detailed overall base mapping is recommended.
4. A variety of vehicles, including prewar-vintage construction equipment, is reported at Tanaga. There is the possibility that early test models of Weasels exist at Tanaga. All vehicles should be inventoried, evaluated and treated according to the recommendations presented in Appendix D.
5. At least four downed aircraft are potentially available on Tanaga: an OA-10, a P-38, a B-25 and a rare JM-1 (Navy version of the B-26). Attempts should be made to locate and evaluate any such remains. These should be evaluated according to the recommendations presented in Appendix C, including recovery.
6. A total of 12 aboriginal archeological sites are known on Tanaga, all of which are 14(H)(1) selections. These should be relocated and access restricted during DERA activities.

6.2.31 Ward Lake

1. The ACOE DERA inventory report for Ward Lake (Sverdrup-Ward Lake 1986) recommended that Ward Lake be removed from the DERA list. We concur with this recommendation.

6.2.32 Whittier

1. With the exception of the existing rail tunnel (Whittier Cutoff), which is still in active use, no historically significant remains associated with the World War II in Alaska context are known to be extant at Whittier. DERA activities may be implemented without conditions.

6.2.33 Yakutat

1. DERA activities were completed at Yakutat in 1985 (Moore 1986, personal communication).

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Restoration Account: Chernofski Harbor, Alaska, prepared by
Woodward-Clyde Consultants for US Army Engineer District, Alaska,
Contract No. DACA 85-85-003.

*Woodward-Clyde 1985e Draft Inventory Report - Defense Environmental
Restoration Account: Umnak Island, Alaska, prepared by Woodward-Clyde
Consultants for US Army Engineer District, Alaska, Contract No. DACA
85-85-C-003.

* Indicates work cited in the text

APPENDIX A

A DIRECTORY OF INSTITUTIONS AND ARCHIVES CONSULTED

Alaskan Air Command
Office of History
Elmendorf Air Force Base
Anchorage, Alaska 99506

Alaska Railroad Headquarters
Anchorage, Alaska
Phone: (907) 265-2411
Archivist: Karen Morissey

American Aviation Historical Society
P. O. Box 99
Garden Grove, CA 92642
Phone: (714) 549-4818)

Anchorage Municipal Libraries
524 West Sixth Avenue
Anchorage, Alaska 99501
Bruce Merrel, Alaska Collection
Librarian

Canadian Department of National Defence
Directorate of History
101 Colonel By Drive
Ottawa, Ontario K1A 0K2
Canada
Phone: (613) 998-7057
W. A. B. Douglas, Director
J. D. F. Kealy, Senior Research Officer

Cold Regions Research, Engineering Lab.
Alaskan Projects Office Library
Building 4070
Fort Wainwright, Alaska 99703

Engineering Societies Library
345 East 47th Street
New York, NY 10017
Ms C. Carbone

Gonzaga University
Crosby Library
Oregon Province
Archives of the Society of Jesus
East 502 Boone Avenue
Spokane, WA 99258
Fr. Neill R. Meany, S.J., Archivist

Alaska Historical Library
Pouch G
Juneau, Alaska 99811-0571
Director: Richard P. Engen

Alaska State Archives and Records Service
Pouch C, MS 0207
Juneau, Alaska
Virginia Newton, Deputy State Archivist
Phone: (907) 465-2275

Anchorage Historical and Fine Arts
Museum Archives
121 West Seventh Avenue
Anchorage, Alaska 99501
M. Diane Brenner, Archivist

Army Center of Military History
Washington, DC 20314-0200
Janice McKenney
Phone: (202) 272-0303

Libraries of the Claremont Colleges
Norman F. Sprague Memorial Library
Harvey Mudd College
Claremont, CA 91711
Phone: (213) 621-8000

Defense Audio-Visual Agency
Public Sales
Code LCP
Building 219
Washington Navy Yard
Washington, DC 20374
John Vetter
Phone: (202) 433-2166

General Services Administration
Office of Real Property,
Western Division
18th and F Streets, NW
Washington, DC
Rosemary Newton
Phone: (202) 535-7056

Sheldon Jackson College
Stratton Library
P. O. Box 479
Sitka, Alaska 99835

A. Holmes Johnson Memorial Library
P. O. Box 985
Kodiak, Alaska 99615

(Japanese) War History Office,
Defense Agency
1 Honsmura-Cho
Ichigaya, Shinjuku-ku
Tokyo, Japan

Ketchikan Community College Library
7th and Madison
Ketchikan, Alaska 99901

Ketchikan Public Library
629 Dock Street
Ketchikan, Alaska 99901

Kettleson Memorial Library
P. O. Box 1040
Sitka, Alaska 99835
Nancy Gustavson

Kodiak Community College Library
P. O. Box 946
Kodiak, Alaska 99516

Kegoayah Kozga Public Library
P. O. Box 1168
Nome, Alaska 99762
Astrid-Herma Smart, Head Librarian
Phone: (907) 443-5133

Library of Congress

Geography and Map Division
Washington, DC 20540
Phone: (202) 287-6277

Manuscript Division
Washington, DC 20540
Phone: (202) 287-5387

Motion Picture, Broadcasting &
Recorded Sound Division
Washington, DC 20540
Katharine Loughney,
Reference Librarian
Phone: (202) 287-1000

Prints and Photographs Division
Washington, DC 20540
Phone: (202) 287-6394

Marine Corps Historical Center
Building 58
Washington Navy Yard
Washington, DC 20380
Danny Crawford
Phone: (202) 433-3483

U.S. Air Force
Historical Research Center
Maxwell Air Force Base
Alabama

Carrie M. McLain Museum
P. O. Box 53
Nome, Alaska 99762

National Archives and Records Administration

Cartographic and Architectural Branch
Washington, DC 20408
John Dwyer
Phone: (703) 756-6700

Diplomatic Legislative Branch
Washington, DC

Federal Archives and Records Center
Archives Branch
2306 Bannister Road
Kansas City, MD 64131
Marie Weisz or
Patrick J. Borders, Director
Phone: (816) 926-7271

Federal Archives and Records Center
Archives Branch
1000 Commodore Drive
San Bruno, CA 94066
Mel Mingo
Phone: (415) 876-9009

Federal Archives and Records Center
Archives Branch
6125 Sand Point Way, N.E.
Seattle, WA 98115
David Piff
Phone: (206) 526-6507

Judicial and Fiscal Records Branch
8th and Pennsylvania Ave, N.W.
Washington, DC 20408

Modern Military Field Branch
Military Archives Division
Washington, DC 20409
Attn: Branch Chief

Motion Pictures Branch
Washington, DC 20408
Phone: (202) 523-3063

Office of the National Archives
8th and Pennsylvania Avenue, N.W.
Washington, DC 20408
Renee Jaussaud, Archivist of the
Social Economic and Natural
Resources Branch
Phone: (202) 523-3238

Still Pictures Branch
Washington, DC 20408
Fd McCarter, Archivist
Phone: (202) 523-3054

Naval Facilities Engineering Command
Historical Information Officer
Naval Construction Battalion Center
Port Heunewe, CA 93043
Vince Transano

Naval Historical Center
Washington Navy yard
9th and M Streets, S.F.
Washington, DC 20374
Phone: (202) 433-3224
Dr. Dean Allard, Head,
Operational Archives Branch

New England Air Museum
(formerly the Bradley Air Museum)
Bradley International Airport
Windsor Locks, CT 06096

The New York Public Library
Astor Lenox and Tilden Foundation
Fifth Avenue and 42nd Street
New York, NY
Phone: (212) 932-0800

Public Archives of Canada
Archives Branch
395 Wellington Street
Ottawa, Ontario
K1A 0N3 Canada

National Film, Television and
Sound Archives
Andris Kesteris, Head
Audio-Visual Public Service

National Map Collection
Carol White
Services Section

National Photography Collection
Public Service Section
Joy Houston, Head of Public Service
Phone: (613) 996-7779

Picture Division
Collections Management
Diane Martineau, Reference
Assistant

Public Archives Library
Lise Perron-Croteau, Chief
Reference and Loan Section

Franklin D. Roosevelt Library
Hyde Park, NY 12538
Ms Frances Seibert, Chief Archivist
Phone: (914) 229-8114

Seattle Historical Society
Museum of History and Industrial
Archives
2161 East Hamlin
Seattle, WA 98112
Phone: (206) 324-1125
Martha Fulton-Stout, Registrar

Seward Community Library
P. O. Box 537
Seward, Alaska 99664

The Smithsonian Institution
National Air and Space Museum
Library
7th and Independence Ave, S.W.
Washington, DC 20560
Phone: (202) 357-3133
Dana Ball
Records Management Division

The Society of Wireless Pioneers, Inc
P. O. Box 530
Santa Rosa, CA 95402

(Department of the Navy)
The Submarine Force Library and
Museum
Naval Submarine Base, New London
Groton, CT 06340
Robert J. Zollars, Director
MMCS (SS)

The Harry S. Truman Library
Independence, Missouri 64050
Benedict K. Zobrist, Director
Phone: (816) 750-1400

United States Air Force
Office of Air Force History
HQ USAF/CHOS
Washington, DC 20314
Phone: (202) 767-5090
Historians Grant Hales and
William Heimdahl

United States Air Force Academy Library
Special Collections Branch
USAF Academy, CO 80840
Archivist Reid

United States Army Corps of Engineers
Alaska District
Box 898
Anchorage, Alaska 99506

Historical Office
DAEN-ASH
Kingman Building
Fort Belvoir, VA 22060-5577
Dr. John Greenwood, Chief;
Dr. Martin K. Gordon
Phone: (703) 355-2543

United States Coast Guard Academy Library
New London, CT 06320

United States Coast Guard Museum
Northwest
1519 Alaskan Way South
Seattle, WA 98134
Phone: (206) 442-5019

United States Coast Guard 17th District
P. O. Box 3-5000
Juneau, Alaska 99802
Commander

United States Coast Guard Station
Support Center
Kodiak, Alaska 99615
Lt. Rec M. Takahashi,
Planning Officer

United States Coast Guard Station
Sitka, Alaska 99835
Commander

(Department of the Army)
United States Military Academy Library
Special Collections Division
West Point, NY 10996-1799
Mrs. Marie T Capps
Map & Manuscript Librarian

(Department of the Navy)
United States Naval Academy
The Nimitz Library,
Special Collections Division
Annapolis, MD 21402
Miss Alice S. Creighton, Head
Special Collections
Phone: (301) 267-2220

United States Naval Institute
Library and Photograph Services
Annapolis, MD 21402
Patty M. Maddocks, Director
Phone: (301) 268-6110

Oral History Department
Annapolis, MD 21402
Susan B. Sweeney,
Phone: (301) 268-6110
(301) 261-2700

University of Alaska

Anchorage Archives
3211 Providence Drive
Anchorage, Alaska 99508

Fairbanks - Polar Regions Department
Archives
Rasmuson Library
Fairbanks, Alaska 99701

Juneau - Library
11120 Glacier Highway
Juneau, Alaska 99811

Vallejo Naval and Historic Museum
Research and Accessions Division
734 Marin Street
Vallejo, CA 94590

Washington State University Library
Manuscripts-Archives Division
Pullman, WA 99164-5610
Kerry S. Bartels,
Acting Manuscripts-Archives Librarian

University of Washington Libraries

Archives and Manuscripts Division
FM-25
Seattle, WA 98195
Phone: (206-543-1879
Jane P. Hershman
Library Specialist

Suzzallo Library
Special Collections Division
Historical Photography Collection
Seattle, WA 98195
Phone: (206) 543-1929
Richard H. Engeman
Assistant Librarian

Washington National Records Center
(Suitland)
Modern Military Field Branch
Military Archives Division
National Archives and Records Admin.
Washington, DC 20409
Amy Schmidt
Phone: (301) 763-7435

Western American Institute for
Exploration
Western Research Library
1821 East 9th Street
The Dalles, OR 97058
Jay Ellis Ransom,
Executive Director
Phone: (503) 296-9414

APPENDIX B

A PRIORITIZED LIST OF INFORMATION SOURCES

B.1 INTRODUCTION

The following constitutes a list of documentary sources of information regarding military sites relating to the World War II era in Alaska. To compile the list, institutions thought to possess materials relevant to World War II in Alaska were canvassed by letter advising them of the project and its interests and requesting information on pertinent holdings. In some instances the letters were followed up with telephone contacts. The list represents responses received as of September 30, 1986.

The list is organized into five sections:

- I. Institutions with relevant materials examined for this project;
- II. Institutions identified as having holdings which are likely to be relevant and should be visited;
- III. Institutions identified as having materials which are duplicative, marginally relevant, or of an insufficient quantity and which will not be visited;
- IV. Institutions determined not to have relevant data; and
- V. Institutions from which no reply regarding holdings has been received to date.

The groupings and internal order of listing represent a preliminary determination of the relative importance of the holdings with respect to developing a management plan for World War II DOD sites in Alaska.

B.2 INSTITUTIONS WITH RELEVANT MATERIALS EXAMINED FOR THIS PROJECT (I)

1. National Archives and Records Administration (Washington, DC).
[Envirosphere Database Nos. 484-486, 607-735]

The Office of the National Archives holds records related to World War II in Alaska in several of its branches. Archivist Renee Jaussaud of the Social, Economic and Natural Resources Branch has served as the overall contact for the records in the various branches.

Documents examined at NARA/DC include: RG 126 Records of the Office of Territories housed within the Social, Economic and Natural Resources branch; RG 51 Records of the Bureau of the Budget housed within the Judicial and Fiscal Branch; RG 407 Records of the Adjutant General's Office, a geographical file which includes a group of maps showing army roads, landing fields, anchorages and construction sites; RG 187 Records of the National Resources Planning Board; RG 80 General Records of the Department of the Navy 1798-1947; RG 49 Records of the Bureau of Land Management; RG 18 Records of the Army Air Forces; RG 46 Records of the United States Senate; RG 22 Records of the Fish and Wildlife Service; and

RG 153 Records of the Office of Judge Advocate General which contain Department of the Army permits, maps of CANOL rights-of-way, and information about land condemnation proceedings for CANOL.

2. Washington National Records Center (Suitland, MD)
[Envirosphere Database Nos. 742-1428, 1946-2088]

Materials examined at WNRC which proved most pertinent to this project include RG 77 Records of the Chief of Engineers which contain the Harbor Defense Files and Construction Completion Reports; RG 18 Records of the Army Air Force, Decimal File; RG 49 Records of the General Land Office; and RG 92 Records of the Office of the Quartermaster General.

3. National Archives and Records Administration, Still Pictures Branch
(Washington, DC)
[Envirosphere Database Nos. 1457-1473]

Materials examined at NARA/SP include photos categorized within RG 80 General Records of the Department of the Navy, 1798-1947; RG 75 Records of the Bureau of Indian Affairs; RG 126 Office of Territories; RG 208 Records of the Office of War Information; RG 77 Records of the Office of the Chief of Engineers.

4. National Archives and Records Administration, Federal Archives and Records Center, Cartographic Branch (Franconia, VA)
[Envirosphere Database Nos. 487-606]

Materials examined at NARA Cartographic Branch include items filed within RG 407 Records of the Adjutant General's Office, Geographical File; RG 57 Geological Survey, Alaska Survey Material; RG 77 Office of the Chief of Engineers (general construction plans); RG 77 War Department Map Collection; RG 126 Office of Territories, Territorial Files - Alaska; and RG 48 Records of the Office of the Secretary of the Interior.

5. National Archives and Records Administration, Federal Archives and Records Center, Archives Branch (Seattle, WA)
[Envirosphere Database Nos. 1429-1456]

Materials examined at NARA/SEA include RG 322 Records of the Alaska Railroad; RG 342 Records of the U. S. Air Force Commands Activities and Organizations; and RG 181 Records of Naval Districts and Shore Establishments.

6. National Archives and Records Administration (Kansas City, MO)
[Envirosphere Database Nos. 736-741]

Materials examined at FRC/KC include RG 77 Records of the Chief of Engineers including reports and photos, maps and drawings from air, rail and port surveys in Alaska, reports of materials testing, and detailed shipment lists.

7. Naval Facilities Engineering Command Historical Information Office
(Port Hueneme, CA)
[Envirosphere Database Nos. 1474-1842]

Materials consulted at NAVFAC include U.S. Naval Construction Force Seabee Records, records relating to special construction battalions and numerous photographs. In addition, the motion picture collection depicts the building of bases, the Seabees at work, comparative testing of equipment in the Arctic, and Seabees at play. Also examined were Military Facilities Drawings which show various structures and plans for construction including some photos, monthly reports and histories of various battalions.

8. Library of Congress (Washington, DC 20540)
[Envirosphere Database Nos. 460-483]

Materials examined at LC include the papers of Harold L. Ickes and General H.H. "Hap" Arnold as well as monographs related to Alaska. These are housed within the Manuscript Division collection.

9. The University of Alaska - Fairbanks: Alaska and Polar Regions Department Archives
[Envirosphere Database Nos. 118-293]

Materials examined include microfilmed Command Histories entitled "U.S. Navy Aleutian Campaign" vertical files which contain the manuscripts entitled "Military in Alaska - Alaska Scouts" and an oral history tape collection which consists of a series of interviews with various informants some of whom had participated in the Naval activity during World War II in Alaska. In addition, materials catalogued within RG 348 Records of the Alaskan Territorial Government were also examined. These records include correspondence from and to Governor Gruening as well as other general correspondence. Also examined was the Hanna-Call Collection, a collection of Aleutian Island World War II photographs; the Ernest H. Gruening Papers including diaries and notebooks; the Anthony J. Dimond Papers including legislative, political and personal files; the E.L. Bartlett Papers, personal files of Bartlett; and the Otto Geist Alaska Territorial Guard Papers.

10. University of Alaska - Anchorage Archives
[Envirosphere Database No. 294-359]

Materials examined at UAA Archives and Manuscripts Department include the Alaska Railroad War Record; the draft history of the Army Communications Operation in Alaska; papers of the Armed Forces Radio in Sitka and Kodiak Oral History Project; a History of Fort Richardson by R. W. Fagen; manuscript from the "Wings Over Alaska" conference; history of the U. S. Army 18th Engineers Regiment; Folder B1 "Frigid" Diary from the B.I. Staser Family Papers, newspapers from the A. Virag Collection; records of the Railway Operating Battalion; V. C. Rivers correspondence; and the daily logs of B. B. Talley.

11. Alaskan Air Command, Office of History, Elmendorf Air Force Base
[Envirosphere Database No. 1580-1692, 1-117]

Materials examined at Elmendorf AFB Office of History include a microfilm collection of the histories of the Advanced Command Post Headquarters, 11th Air Force; the Japanese documents captured at Attu; photographs, various histories of islands, Air Force bases and landing fields. Additional items examined include early plans of the buildup of World War at bases and defenses and the Photo/Manuscript "Bookcase" Collection which contains the 1944 "Narrative Report of Alaska Construction 1941-1944" by Col. J. P. Bush, Jr, histories of various air bases and photographs of various bases and the Aleutian Campaign. Additional materials which have been examined for this project include miscellaneous files dealing with the World War II buildup.

12. Army Corps of Engineers, Alaska District (Anchorage, AK)
[Envirosphere Database Nos. 1930-1933]

Materials examined at the ACOE/AK office include World War II construction drawings. The collection consists of 39 drawers which contain 250 sheets per drawing. Most of the collection appears to relate to military construction and includes information on airfields, garrisons, aircraft warning service stations, harbor defenses and many of the major bases in Alaska. Also examined were materials in the Records Holding Area, Installation Historical Files. These consisted of photographs of CANOL and of military buildings.

13. Army Corps of Engineers Historical Office (Fort Belvoir, VA)
[Envirosphere Database Nos. 416-459]

Materials examined at the ACOE Historical Office are the RG 77 Office of the Chief of Engineers materials relating to ALCAN and CANOL.

14. Defense Audiovisual Agency
[Envirosphere Database Nos. 360-414]

Photographs examined from DAVA collections included Army and Naval photos. Also examined were photos of Signal Corps and the Army Corps of Engineers.

15. Smithsonian Institution National Air and Space Museum Library
(Washington, DC)
[Envirosphere Database Nos. 1888-1928]

Materials examined at Air/Space included photographs of the Soviet Lend-Lease facilities and combat operations against the Japanese Aleutian bases. Also examined were U.S. Air Force photo collections.

16. General Services Administration Office of Real Property, Western Division
(Washington, DC)
[Envirosphere Database Nos. 415]

Materials examined included descriptions of various properties in Alaska surplused by the U.S. Government between 1945 and 1953.

17. Naval Historical Center, Naval History Division (Washington, DC)
[Envirosphere Database Nos. 1843-1877]

Materials examined at NHC included the following series: Action Reports; Command Files; Base Maintenance Division records; Office of Naval Intelligence Combat Narratives; and the General Board Records.

18. University of Washington Libraries, Archives and Manuscripts Division,
Northwest Regional Manuscripts Collection
[Envirosphere Database Nos. 1934-1945]

Materials examined at UWL included the William S. Lagen Papers and the Warren G. Magnusen Congressional papers. The Lagen papers relate to American Pacific Sea Products, specifically the whaling station at Akutan which was leased by the Navy during World War II.

19. New York Public Library, Astor Lenox and Tilden Foundation

Collections examined in the NYPL included issues of the Military Engineer, American translations of the Japanese Monographs which supply a historical war record of Japanese in World War II and various military unit histories.

B 3. INSTITUTIONS IDENTIFIED AS HAVING HOLDINGS WHICH ARE LIKELY TO BE
RELEVANT AND WHICH SHOULD BE VISITED (II)

1. Submarine Force Library and Museum
Naval Submarine Base New London, Groton, CT 06340

Holdings: Has copies of World War II Submarine Reports housed in the Naval Historical Center. Also has "lost" and confidential submarine diaries from the Alaska theater. Duplicating holdings is difficult.

Amount: Undetermined

2. War History Office, Defense Agency, Japan
1 Honsmura - Cho, Ichigaya, Shinjuku-ku, Tokyo, Japan

Holdings: War documents, diaries, official reports.

Amount: Undetermined

3. Alaska Historical Library
Pouch G, Juneau, Alaska 99811-0571

Holdings: Relevant photo collections are Album 8 The Army in Alaska since 1867 [U.S. Army, 172d Infantry Brigade, 1975]; Album 42 Scenes in the Yukon, 1943, Fred B. Dodge; Album 61 U.S. Alaska Road Commission [construction of roads, trails and bridges in Alaska; construction of Alaska Hwy. 1909-1951] Vol. 1, Ak. Hwy., Richardson, Big Delta to Fairbanks, 1941-1956 (190 photos); Vol. 33, Ak. Hwy. and Fairbanks Division (51 photos); Vol. 87, Along Ak. RR, Sept. 1942 (37 photos); Vol.

107, series B, 78 lantern slides taken along Ak. Hwy. in 1942-1943; Vol. 132, Ak. Hwy., Section B (35 photos); Vol. 133, Whittier--Portage (6 photos); Album 64 U.S. Alaska Communications System [communications stations, equipment and personnel in Alaska, 1904-1963] 1900+ photos grouped by location, includes photos of Adak, Alcan, Cold Bay, Ft. Greeley, Attu, Dutch Harbor, etc.; Album 80 MacKinnon, James Simpson [U.S. Naval occupation of Kiska and surrender of Japanese forces at Hokkaido, 1943-1945]; Album 98 The Aleutian Campaign, WW II, 1942-43; Album 175 U.S. Army Signal Corps [military posts, telegraph stations and general views of Alaska, 1899-1970]. These photos were selected from collections at Natl. Archives and Pentagon by Lyman Woodman while he was researching military history of Alaska; Album 193 Alaska Hwy. Collection [construction, incl. bridges, equipment, camp life, military personnel, 1942-43], donated by Ft. Worth Museum of Science and History, Texas. The library also has several WW II-related things on microfilm from the Natl. Archives and a photocopied typescript (12pp?) on evacuation of Aleuts from Akutan, Nikolski, and Unalaska to Ward Lake, by Fred R. Gesslin (1982). There are detailed finding aids for all but Album 61 and Album 64. Other relevant records duplicated in microfilm holdings, University of Alaska, Fairbanks.

4. National Defence Directorate of History, National Defense Headquarters
2429 Holly Lane, Walking Road, Ottawa, Canada K1A0K2

Holdings: A number of files, maps and other documentation in their records including the following subject headlines: Alcan Highway; North-West Ferrying Route; Maps-Canadian operations and general; the Aleutian Campaign-Canadian involvement; Papers on the Defense of the West Coast; U.S. Reports on construction progress; Army and Navy bases in Alaska; Records of Canadian Units in Aleutian Islands and Alaska; and Annette Island.

5. George Arents Research Library, Syracuse University, Syracuse, NY 13210

Holdings: The papers of Robert Lee Sherrod. Sherrod was Time and Life Washington, Far East and War correspondent from 1935-1952. Holdings include Series I - 21 boxes (Box 14 - outgoing correspondence, 1926-December, 1944); Series II - 12 boxes (Box 1 - subject files, Alaska-Aleutian, 1943); Series III - 3 boxes (Box 1 - press dispatches, 1942-December, 1949); Series IV - 2 boxes (Box 1, 2 - notebooks, Aleutians 1943-1944); Series V - 1 box (Box 1 - photographs, Aleutians, Attu, 1943). Sherrod was the Time - Life correspondent on Attu.

6. Alaska State Archives and Records Service
Pouch C., MS 0207, Juneau, Alaska 99811

Holdings: Believed to be extensive. However, the Deputy State Archivist advises that "many of these records are not processed and inventories do not exist."

B 4. INSTITUTIONS IDENTIFIED AS HAVING HOLDINGS WHICH ARE DUPLICATIVE, MARGINALLY RELEVANT, OR OF AN INSUFFICIENT QUANTITY AND WHICH WERE NOT BE VISITED (III)

1. Air Force, Office of Air Force History
HQ USAF/CHO, Washington, DC 20332

Holdings: The main body of USAF records are located at the Historical Research Center, Maxwell Air Force Base, Alabama. Microfilmed copies of most of that material can be examined at the office of Air Force History at Bolling Air Force Base, Washington, DC. However, USAF historians Grant Hales and William Heimdahl advised that the records of the Alaska Command at Elmendorf AFB far surpass anything in Washington. They suggested that the Alaskan researcher not only investigate the materials at Elmendorf, but also look at microfilm copies from the Air Force archives at Maxwell AFB maintained in the Anchorage office.

Amount: Undetermined

2. Engineering Society Library
345 East 47th St., New York, NY 10017

Holdings: Maintains a complete run of the journal Military Engineer including articles on World War II construction projects in Alaska. (Military Engineer examined at the New York Public Library.)

Amount: Undetermined

3. Archives Branch, Federal Archives and Records Center (San Francisco)
1000 Commodore Drive, San Bruno, CA 94066

Holdings: None

4. Army Center of Military History
Washington, DC 20314-0200

Holdings: The center holds organizational histories and oral histories. Archivist Janice McKenney indicated, however, that the oral histories are Vietnam-oriented and that the Alaska materials are limited. For this period in Alaska, the COE records tend to be more important. The Center also holds copies of bibliographies for the Military History Institute, Carlisle Barracks, Pennsylvania.

Amount: Not presently known, but McKinney believed that it is very little.

5. Coast Guard Museum/Northwest
1519 Alaskan Way South, Seattle, WA 98134

Holdings: Holdings include 10 feet of U.S. Coast and predecessor services records dating from 1857-present, per Allard et al., U.S. Naval History Sources in the United States, p.198.

Amount: Curator indicated that at best he might have 50 photos and a couple of clippings. His collection contains virtually nothing dealing with Alaska, except possibly some rescues from ships that went aground.

6. Franklin D. Roosevelt Library
259 Albany Post Rd., Hyde Park, NY 12538

Holdings: Map room file, with some material related to military sites in Alaska; Official Alaska file, with some material concerning the Alaska Railroad; Alaska War Council file; appointments file, with some material concerning defense installations; a few photos showing FDR on a visit to Adak; a Safe file on Alaska (now declassified). Archivist advised, however, that the material did not appear to be of crucial interest.

Amount: Archivist estimates 25 pages for the map room and 500-1000 pages in the appointments file; other materials scattered through at random.

7. Gonzaga University, Crosby Library, Oregon Province Archives
East 502 Boone Avenue, Spokane, WA 99258

Holdings: Letter, April 10, 1985, indicates that materials in their collection concerning World War II in Alaska appear sparse and difficult to locate. Points out that none of the Jesuit missionaries was stationed in the Aleutians, though at least one was an auxiliary chaplain.

Amount: Undetermined

8. Harry S. Truman Library
24 Highway and Delaware, Independence, MO 64050

Holdings: Some materials relating to military bases, particularly during the Korean War period, and several series of photos. A check of topic cards appeared to show numerous duplications with holdings in Washington, particularly materials from the Department of the Interior. Some private paper collections may have scattered material.

Amount: Ca. 70 folder subjects; several photo series.

9. Marine Corps Historical Center
Building 58, Washington Navy Yard; Washington, DC 20380

Holdings: MCHC has within its collections primary documentation on the role played by Marines in Alaska during World War II including historical war diaries which detail the actions that took place in particular locations in Alaska, and monthly muster rolls that list individuals serving in Marine barracks and other units. The war diaries are also maintained at FRC - Suitland. Muster rolls are maintained at MCHC's Reference Section. Because of the limited roll played by the Marines in Alaska during World War II and the limited amount of actual

material at the MCHC, detailed examination of MCHC holdings is not warranted.

Amount: Undetermined

10. New England Air Museum (formerly the Bradley Air Museum)
Bradley International Airport, Winsor Locks, CT 06096

Holdings: One airplane, which crashed in Alaska after World War II, is in storage. It is unrestored.

11. United States Coast Guard Academy Library
New London, CT 06320

Holdings: These are very limited, but librarian indicated she would check and send finding aids, per telephone conversation on May 13, 1985. No further information received.

12. Seattle Historical Society Museum of History and Industry Archives
2161 East Hamlin, Seattle, WA 98112

Holdings: Registrar, promised to check holdings. No further information received.

13. United States Naval Academy, Nimitz Library Special Collections Division
Annapolis, MD 21402

Holdings: Steichen Combat Print Collection.

Amount: Ca. 75 prints.

14. University of Washington, Suzzallo Library Special Collections Division,
Historical Photography Collection
Seattle, WA 98195

Holdings: A few photos and some printed material.

Amount: Cannot be determined without visit, according to Archivist Engeman.

15. Alaska Railroad Headquarters
Anchorage, Alaska 99502

Holdings: Contacted by phone April 16, 1985. They have nothing on World War II period. All holdings from that period are in the Federal Records Center in Seattle. There is an index of sorts which can be examined at the FRC in Seattle or at the Railroad Hdqtrs. in Anchorage. Please note that the UA archives in Anchorage contain a 50 pg. typed ms "U.S. Dept. of Interior. The Alaska Railroad War Record. Prepared at Anchorage, Alaska, August 20, 1945." Contents as follows: Intro. p. 1; Security measures taken p. 5; River transport p. 9; Improvements p. 10; Whittier gateway p. 12; Eska coal mine p. 17; Telephone and telegraph p. 27; Rolling stock p. 27; Traffic p. 31; Carloadings p. 33; Labor p. 35;

Materials p. 41; Relations with Alaskan Dept. p. 42; Financial results p. 47; Post-war operation p. 48; proof sheets with 15 b&w photos.

16. Kegoayak Kozga Library
Nome, Alaska 99762

Holdings: a) 2 cassettes (w/transcripts) of an interview with Col. R. N. Maupin (USAF, ret.), base commander of Nome airfield in 1943. "There is a permit to use this interview for publication." Col. Maupin now lives in Oceanside, CA; b) photos with and without captions of military ceremonies held in Nome in the 1960s (sic) which are the property of the Carrie McLain Museum, Nome. There are no finding aids or indexes.

17. Anchorage Historical and Fine Arts Museum Archives
Anchorage, Alaska 99502

Holdings: Photos: approx. 50 of war in the Aleutians; a small badly damaged album of Chiniak, Kodiak Island; reprinted materials from Yakutat and Southern Railroad; a few photos of McGrath during the war; misc. airbases, filed by town. Documents: ca. 2 cubic ft. transferred from Thomas Dowell who did early cleanup report on contract with Corps of Engineers. Paul Chatty (SHPO office) can be asked about contents. They also have a few miscellaneous things like Road Commission reports on airport construction.

18. Kettleson Library
Sitka, Alaska 99835

Holdings: Memory book of the CBMU (512) that was stationed in Sitka for part of the war. Contains portraits of some of men and some narratives about construction in Sitka area. No maps or construction details.

19. Maxwell Air Force Base, Historical Research Center
Montgomery, Alabama 36112

Holdings: Main body of USAF records. Microfilms of most material is available at the Office of Air Force History at Bolling Air Force Base, Washington, DC. Materials duplicated and available in greater depth at Elmendorf Air Force Base, Alaska.

Amount: Undetermined

B 5. INSTITUTIONS DETERMINED NOT TO HAVE RELEVANT DATA (IV)

1. Anchorage Municipal Libraries
Anchorage, Alaska 99502

Holdings: No archival material.

2. Libraries of the Claremont Colleges, Norman F. Sprague Memorial Library
Harvey Mudd College, Claremont, CA 91711

Holdings: Aviation history collections.

Amount: None.

3. United States Air Force Academy Library, Special Collections Branch
USAF Academy, Colorado Springs, CO 80840

Holdings: None, according to Archivist Reid in a phone conversation May 13, 1985.

4. United States Military Academy Library, Special Collections Divisions
West Point, NY 10996

Holdings: Mrs. Capps advised by letter April 15, 1985, that no unique holdings related to World War II in Alaska are currently in West Point's library.

5. United States Navel Institute Oral History Office
Annapolis, MD 21402

Holdings: Sweeney advised per letter, April 17, 1985, that entire collection is housed at the Naval Historical Center in Washington, DC.

6. Washington State University Library, Manuscripts-Archives Division
Pullman, WA 99163

Holdings: None.

7. Western America Institute for Exploration, Inc., Aleutian-Bering Sea
Expeditions Research Library
1821 East 9th Street, The Dalles, OR 97058

Holdings: A letter (4/9/85) from this organization suggested that Western Michigan State University, Kalamazoo, and the University of Michigan in Ann Arbor be contacted to see whether any of the photographs from the Bank archeological expeditions to the Aleutians during the War and afterwards, dispersed after the death of Professor Bank, might have ended up in their collections.

8. U.S. Coast Guard Support Center
Kodiak, Alaska

Holdings: None.

9. Vallejo Naval and Historic Museum, Research and Accessions Division
734 Marin Street, Vallejo, CA 94590

Holdings: None

B 6. INSTITUTIONS FROM WHICH NO REPLY REGARDING HOLDINGS HAS BEEN RECEIVED TO DATE (V)

1. American Aviation Historical Society
2331 Otis Street, Santa Ana, CA 92704
2. Stratton Library, Sheldon Jackson College
P.O. Box 479, Sitka, Alaska 99835
3. Carrie M. McLain Museum
P.O. Box 53, Nome, Alaska 99762
4. Ketchikan Public Library
629 Dock Street, Ketchikan, Alaska 99901
5. Cold Regions Research, Engineering Lab
Alaskan Projects Office Library, Building 4070,
Fort Wainwright, Alaska 99703
6. Ketchikan Community College Library
7th and Madison, Ketchikan, Alaska 99901
7. Library, Kodiak Community College
P.O. Box 946, Kodiak, Alaska 99516
8. A. Holmes Johnson Memorial Library
P.O. Box 985, Kodiak, Alaska 99615
9. Society of Wireless Pioneers
P.O. Box 530, Santa Rosa, CA 95402
10. Seward Community Library
P.O. Box 537, Seward, Alaska 99664
11. U.S. 17th Coast Guard District
P.O. Box 3-5000, Juneau, Alaska 99802
12. U.S. Coast Guard Station
Sitka, Alaska 99835

APPENDIX C

PRESERVATION MANAGEMENT PLANNING RECOMMENDATIONS
FOR WORLD WAR II - VINTAGE DOWNED AIRCRAFT
IN ALASKA

C.1 Introduction

Preliminary management and mitigation plans for downed aircraft of World War II vintage in Alaska are presented as a special section of this report. The Programmatic Memorandum of Agreement for DERA activities specifies that all aircraft and significant parts associated with World War II should be treated as potentially eligible for inclusion in the National Register, left in place and avoided by DERA activities. It is recognized that this is an interim measure designed to prevent the destruction of potentially significant resources until such time as a more permanent management strategy can be implemented.

Individual aircraft remains must be considered as potential hazards due to the possible presence not only of unstable live ammunition but also of pressurized oxygen and hydraulic systems. Because these aircraft are frequently targets of private salvage forays, they constitute an attractive nuisance to the public. The accidental destruction of Air Force records pertaining to aircraft lost in Alaska prior to 1961 means that it is not even possible to determine what hazardous materials might have been aboard without actual physical examination. While the potential for environmental and/or personal hazard is real, so is the historic importance, and the situation is further complicated by the substantial market value of the aircraft remains involved.

C.2 Aviation in Alaska with Special Attention to the World War II Period

The first flight in Alaska was made at Fairbanks in 1913, only a year after Alaska became a territory. The flight of the Black Wolf Squadron (from New York to Nome and back) in 1920, was the next significant aerial event, demonstrating that Alaska could be linked by air to the rest of the US. As early as 1922, commercial aviation was being pioneered in Alaska, with airmail routes being flown in 1924. In the same year, the Douglas World Cruisers around-the-world flight (with a leg being flown along the Alaska coast and across the Aleutian Chain) caused an international stir and, incidentally, provided the occasion of the first crash of a military aircraft in Alaska.

As the Federal Writers' Project volume on Alaska noted, "Alaska may not be ideally suited for aviation; [but] aviation is ideally adaptable to Alaska" (Colby 1939). The vast distances and general difficulty of access in Alaska made air travel an appealing if hazardous means of transport and led to the rapid rise of the tradition of aviation and the Bush pilot. While aviation was largely a novelty in most of the US, it was a way of life in Alaska. Dozens of semi-legendary figures sprang up in Alaskan folk history - Carl Ben Eielson, Noel Wien, Bob Reeve, Harold Gillam, to mention a few - noted for flying fragile equipment in unflyable weather.

In 1926, Roald Amundsen flew the dirigible Norge over the pole from Spitsbergen to Nome, and in 1928 Eielson and Wilkins made the first

heavier-than-air polar Great Circle flight in the opposite direction. In 1930, Wiley Post and Harold Gatty flew through Alaska on a record-time around-the-world flight, a record broken by Post flying solo along the same route in 1933. Post and Will Rogers would be killed in a crash at Barrow in 1935. In 1931, Charles Lindbergh and Anne Morrow Lindbergh flew from New York to Tokyo via Alaska, and in 1938, Howard Hughes piloted a multi-passenger plane through the Territory on a circumnavigation flight. Military flights, designed largely to demonstrate the potential of military aviation in as dramatic a fashion as possible, included the Black Wolf and World Cruiser flights, and the solo 1929 flight of Captain Ross Hoyt in a Curtiss XP-68 from New York to Nome and part way back. The Army Signal Corps had been authorized to establish aerial capabilities since 1914, but the only military air presence came from such hit-and-run visits. The Navy did send an aerial mapping and reconnaissance mission to Southeast Alaska in 1926, but no permanent facilities were established. In 1934, the Alaskan Flight of B-10s, led by Lieutenant Colonel Henry A. "Hap" Arnold, who had been on the World Cruiser flight and would command the Army Air Forces in World War II, flew from Washington, DC to Nome and back. It was not until 1937 that the Navy established any air facilities - an advanced seaplane base at Sitka - and it was 1940 before an Army airfield - Ladd Field at Fairbanks - was inaugurated.

Despite the authority of the 1926 Air Commerce Act and the Wilcox Air Defense Act in 1935, the construction of civilian and military air facilities lagged in Alaska. Nevertheless, aviation itself surged in Alaska. Though service was primarily provided by individual Bush pilot entrepreneurs, Pan American Airlines began operating the first scheduled service in Alaska in 1932. It had competition from 11 other airlines. Commercial aviation enterprises in Alaska in 1932 operated 31 aircraft out of 72 airfields and six floatplane bases. Alaska throughout the 1930s had the highest per capita air travel rate in the world, and in 1938, Alaskan planes carried more freight than all other planes in the US (Draft History 1944:382, 386), all without formal air and navigational facilities. Alaska has also consistently maintained the highest fatality rate per hour of flying time for the entire US, a rate five times higher than the next highest state (Thomas 1982:501), and non-fatal crashes have been even more frequent. By 1938, there were 109 airfields, numerous seaplane facilities and 155 commercial aircraft in Alaska, though most ground facilities were privately constructed and maintained and were primitive at best. At that time there were only four developed airfields in Alaska - Fairbanks, Anchorage, Juneau and Nome - and these were usable only on a seasonal basis. In mid-1939, the Civil Aviation Administration (CAA) began a crash program of airfield and navigational aid construction, building landing strips and radio beacons throughout the interior of Alaska. As the military buildup gained momentum in 1940, the Army began to direct and take over CAA activities.

As Bush (1944: 227) states, "the primary reason for construction in Alaska was to establish an offensive or defensive system of airfields." Even the focal point of naval installations were the airfields for protection of the shore support facilities. The CAA fields in the interior were supplemented by military fields along the coast, with panhandle staging fields at Annette Island and Yakutat and a small facility at Sitka. Further development at Elmendorf Field (Fort Richardson) and Kodiak along the south central coast took on more importance as the war moved westward, and in the final months before Pearl Harbor, basing on the Alaska Peninsula (Port Heiden, Cold Bay)

and on Umnak Island was developed to protect the Dutch Harbor naval base. The Umnak airfield represented one of the first operational uses of a pierced steel plank runway surface. Facilities at Nome, considered a strategic locale for defense against a potential strike across the Bering Sea by either the Japanese or the Soviets, were also developed. The development of the inland Northwest Staging Route through Canada to Ladd Field in Fairbanks was also significant. Coincident with the buildup, Pan Am initiated scheduled air service between Seattle and Alaska in 1940. Northwest, Western and United also established service, which the Army took over on contract in 1942 (Heck 1948:11). By June, 1943, Merrill Field in Anchorage recorded more traffic than Boeing Field in Seattle, LaGuardia Field in New York and the municipal airports at Boston, San Francisco, Philadelphia, San Diego and Los Angeles (Draft History 144: 382-383).

Military staffing was slow to reach operational strength, with the completion of facilities outstripping the ability of the Army and Navy to provide aircraft and personnel. The first combat aircraft to arrive in Alaska was a B-10B bomber in August, 1940. The next aircraft were 20 P-36s and 14 B-18As, which arrived in early 1941. The Navy had only two observation planes, an OS2-U Kingfisher and a J2-F Duck; these were later reinforced by an SOC Seagull and, ultimately, by six PBV-5A Catalinas. Still, only 19 obsolete combat aircraft were airworthy on December 7, 1941. In early 1942, P-40E fighters, B-26 medium bombers, and a handful of heavy bombers (LB-30 and B17E) and C-53 transports were reaching Alaska. In addition, the Royal Canadian Air Force (RCAF) stationed Bolingbroke medium bombers and P-40 Kittyhawks at Annette Island. RCAF units would ultimately fly Kittyhawks and Bolingbroke out of Annette, Yakutat, Kodiak, Elmendorf, Fort Glenn, Adak and Amchitka. The Alaska Defense Command lobbied to get permission to establish Siberian bases, but the Soviets refused to allow a US presence on their territory both on general principle and to avoid compromising their neutral status with Japan, though how such bases could have been constructed and garrisoned at the time is difficult to imagine. By June 1, 1942, there were seven B-26 bombers and 17 P-40 fighters at Umnak, with six B-26s and 16 P-40s at Cold Bay. The Navy was operating eight PBVs. Ten heavy and 34 medium bombers and 95 fighters were in the pipeline to Alaska, but did not arrive in time to take part in the defense of Dutch Harbor.

On June 3-4, 1942, a Japanese carrier force launched two strikes against Dutch Harbor with bombers, torpedo bombers and fighters (Kates, Vals, Zekes). US P-40s, B-26s, and PBVs were engaged, with US forces losing ten aircraft and the Japanese losing an estimated ten aircraft as well, mostly to weather. As a sidelight of the Battle of Dutch Harbor, a Japanese A6M2 Reisen downed on Akutan was later recovered and tested by US flight engineers, though the aircraft (F6-F Hellcat, F4U-1 Corsair) which would eventually best the Zero in combat were already nearing production by that time, so its value was somewhat less than popular accounts have indicated.

Japanese troops from the attacking task force occupied Attu and Kiska and began to construct airfields. The decision was made to dislodge the occupiers and an all-out bombing campaign, the "Kiska Blitz," was begun in June, 1942. Navy PBVs, serviced by seaplane tenders and Eleventh Air Force bombers from Cold Bay and Fort Glenn flew missions against the islands as weather allowed. High level bombing proved ineffective, while mid-level bombing was subject to heavy antiaircraft fire. As a result, fighter-style, deck-level bombing

techniques were developed, as was the technique of a mission command aircraft directing tactical action at the bombing site. The Japanese had no facilities to service land-based planes, but had complements of seaplanes, including A6M Rufes, E13A Jakes, F1M Petes, E8N Daves and H6K Mavises, though weather, continuous action and problems of resupply meant that Japanese air power dwindled fairly rapidly.

Of further significance during this period was the aerial supply of Nome (Operation Bingo), the first actual experience of a major airlift operation, certainly the first under arctic conditions. Using military transport plus 40 impressed commercial aircraft (Stinsons, Bellancas, Ford Trimotors), 55 aircraft flew 218 trips over 18 days, moving 2035 troops and 883,727 pounds of materiel including AA gun batteries (Draft History 1944: 43) to counter a feared invasion threat in the Norton Sound area.

In August, 1942, the ALSIB Lend Lease route began operating. Following the line of Canadian airfields from Great Falls, Montana, to Ladd Field at Fairbanks, the Northwest Ferrying route delivered US aircraft for transfer to Soviet pilots, who then flew to Marks Field at Nome and on to Siberia. In all, 7938 aircraft were transferred to the USSR between 1942 and 1945, including P-39s, P-40s, P-63s, P-47s, A-20s, B-25s, AT-6s, C-46s and C-47s. The aircraft had Soviet insignia applied at Great Falls and were serviced and turned over to Soviet air crews at Ladd. The Soviets reported a total loss rate of 0.2% (about 16 aircraft) on their portion of the route (Ladd to Siberia and across Siberia to the Eastern Front), while the US reported a loss rate of 0.5% from Great Falls to Ladd (about 40 aircraft) (Cloe with Monaghan 1984:154). A total of at least 50 planes were thus lost, but it is unknown how many were lost in Alaska as opposed to Canada and Siberia. A subsidiary route for PBYs and PBNs running through Kodiak and Nunivak Island was also set up, but few aircraft were delivered by this route. The Northwest Staging route was also the primary aerial supply route operated by the Air Transport Command, although the amount of material actually delivered over this route (aside from the aircraft themselves) was relatively insignificant, the main transit route being across the Gulf of Alaska by ship.

While airpower was of critical importance in the Alaska campaign, Commander of the Army Air Force General Arnold reached the conclusion in summer 1942, that other sectors should have a higher priority for aircraft since in Alaska there were few enemy aircraft to engage, bombing was relatively ineffective and there was such a high attrition rate among aircraft and crews. This viewpoint was somewhat modified almost immediately with the decision to extend along the Aleutian Chain in order to develop operating bases closer to Attu and Kiska. In August, 1942, a task force landed on Adak, with the Army Corps of Engineers constructing an airfield on a volcanic sand base in Sweeper Cove by installing a series of dikes to control tidal flow. The first planes were operating within two weeks, and an RCAF fighter unit joined the Eleventh Air Force. During the fall of 1942, the Japanese lost at least 34 planes plus eight probable kills, while the US lost ten planes in combat and 63 to weather and mechanical problems. In January, 1943, Amchitka was occupied and an airstrip constructed. By February, six or seven missions a day were being flown against Attu and Kiska from Amchitka. February also marked the end of the use of B-17s for bombing missions in Alaska.

The advance to Amchitka was preferatory to an assault on Attu, planned for May, 1943. The Navy provided an escort carrier, the Nassau, with 26 F4F Wildcats, for the attack on Attu, while the Army carried out aerial bombardment. During the battle, 10 aircraft were lost, including seven Wildcats, probably due to pilot inexperience. The US forces captured an incomplete airfield near Holtz Bay, where eight Rufes had been destroyed on the ground, and began immediate construction of airfields at Casco Cove and Alexai Point and on nearby Shemya Island. The Alexai Point runway was ready by mid-July. Planning began immediately for the invasion of Kiska, with massive bombing ordered to soften up the garrison defenses. The Japanese had evacuated the island prior to the landing in August, 1943, leaving destroyed aircraft and seaplane facilities and an incomplete runway, which US forces completed within a week.

During the Aleutian campaign from Dutch Harbor through the reoccupation of Kiska, the Army had lost 35 aircraft to enemy action and 150 to other causes. The Navy's Fleet Air Wing had lost 6 planes in combat and 34 to other causes. The Japanese lost an estimated 60 aircraft (Cloe with Monaghan 1984).

After the expulsion of the Japanese from the Aleutians, Alaskan duty settled down to routine, with the only action consisting of intermittent bombing missions on the Japanese Kurile Islands. In December, 1943, all Army airfields east of Adak (except Elmendorf and Ladd) were placed on caretaker (airdrome) status. Most Army Air Force units were withdrawn, as were the RCAF units, leaving B-24s, B-25s and a few PBY's and PV-1s to continue harassing operations. US aircraft damaged in the raids on the Kuriles diverted to Siberia, where aircraft were impounded and crews interned, many being treated essentially as POWs for the duration, though eventually most were secretly repatriated through Iran. Amchitka and Shemya were prepared to serve as bases for B-29s, but these aircraft were never assigned. The only B-29 to use the facilities in World War II was one which had undergone cold weather testing at the Ladd Field facility. The last combat mission from Alaska was flown in August, 1945.

After the war, there was a rapid demobilization, with most bases being placed on caretaker status. The Navy withdrew to a base at Adak, while the Army was left with bases at Fort Richardson and Ladd Field (Fort Wainwright). In 1947, the Air Force became a separate service arm, taking over Elmendorf AFB and Eielson AFB (Mile 26), the latter having the longest runway in the world at the time to accommodate strategic bombers when Alaskan air bases again became important with the increase of Cold War tensions after 1947. After the war, the CAA (now FAA) assumed control over most of the former military airfields, though many could not be adequately maintained. Bush pilots and former military fliers purchased surplus military equipment and began air operations. In 1945, the Civil Aeronautics Board certified 20 commercial airlines in Alaska. World War II vintage aircraft continued in active military service until the Korean Conflict era after 1950, and surplus military aircraft (such as C-47s) continue in private and commercial use to the present. For a more detailed discussion of Alaskan civil and military aviation history, see Kennedy (1982), Cloe with Monaghan (1984), Coles (1950) and Mills (1971).

C.3 Aircraft Types Used in Alaska During World War II

The aircraft listed below represent a compilation of types known to have been used in Alaska during World War II, including the periods immediately prior to

and after the war as defined in the Historic Overview. The list was derived from an extensive review of primary and secondary, published and unpublished sources, including photographs. Annotations include designation, manufacturer, service, models, numbers extant, production figures, etc. and were derived primarily from Angelucci and Matricardi (1977).

Allied

U.S. aircraft were identified by a letter indicating type of aircraft followed by a number, indicating sequence and, usually, a letter indicating model; virtually all were given a code name as well. British aircraft dispensed with all but the name and model designation. The Army, Navy and later the Air Force used different letter designations, leading to confusion and overlaps. The Army used A for attack/light bomber, B for heavy or medium bomber, P for pursuit (fighter), C for transport, F for photoreconnaissance, L for liaison, UC for light transport, O for observation, T for trainer. The Navy used B for bomber, F for fighter, N for trainer, R for transport, O for observation, S for scout, T for torpedo, P for reconnaissance, and J for various. X and Y designations indicated experimental models.

Fighter/Pursuit

Bell P-39 Airacobra: Designed 1937, tested 1939, production 1940; first forward position tricycle landing gear, first central behind-pilot engine mount; 37mm propeller-shaft cannon; poor high altitude performance, but excellent as ground support; primary fighter aircraft available to USAAF in 1941-1942 (along with P-40); Models C, D, E, N, Q; total production run 9558 (4774 transferred to USSR, 2618 via ALSIB); ten of 34 recorded kills in Alaska credited to P-39s.

Bell P-63 Airacomet: Designed 1942, tested 1942, production 1943; P-39 airframe with tail, wing and engine modifications; used for target towing, training by USAAF; model A; total production run 3303 (two-thirds to USSR, 2397 via ALSIB).

Curtiss P-36 Hawk: Designed 1934, tested 1935, production 1938; first production metal-skinned, low-wing monoplane with retractable landing gear (along with P-35); poor performance; used by USAAF to 1942; model A, C; total production run 207; 20 in Alaska.

Curtiss YP-37: Y indicates "experimental," P indicates "pursuit"; a forerunner of the P-40, two were assigned to the Ladd Field Cold Weather Detachment, 1940.

Curtiss P-40 Warhawk: Designed 1937, tested 1938, production 1940; self-sealing gas tanks, armor added; primary fighter (with P-39) for USAAF during 1940-1942; poor performance, but low cost, rapid production availability at outbreak of war; models A, B, C, D, E, F, K, L, M, N; total production run 13,733 (48 transferred to USSR via ALSIB); E model predominant in Alaska; nine of 34 recorded kills in Alaska credited to P-40s; 20 Warhawks extant in museums; British model Tomahawk, Canadian model Kittyhawk (flown in Alaska).

Grumman F4F Wildcat: Designed 1936, tested 1937, production 1940; first operational Navy monoplane; good general performance, considered to be able to absorb punishment; primary Navy fighter 1941-1942; models 2, 3, 3A, 4; total production + 8000; 1942-1945 manufactured under license to GM (FM-1,2); model 4 predominant in Alaska, used in assault on Attu.

Hawker Hurricane: Designed 1933, tested 1935, production 1937; first British low-wing monoplane with retractable landing gear; Canadian built MkX; XI, XII and XIIA (1451); used by Royal Canadian Air Force in Alaska area; total production 14,533.

Lockheed P-38 Lightning: Designed 1937, tested 1939, production 1940; first twin-engine, twin-boom design using superchargers; designed for rate of climb, high altitude performance; most successful fighter aircraft of the USAAF in the Pacific; models D, E, F, G, H, J, L, M: FS photorecon configuration; 15 of 34 recorded kills in Alaska credited to P-38s.

North American P-51 Mustang: Designed 1940, tested 1940, production 1941; a combination design using a North American airframe and a Rolls Royce Merlin engine; considered by many to be the best fighter aircraft of World War II; models, A, B, C, D, H; total production run 15,686; H model predominant in Alaska (1945-1950).

Northrop P-61 Black Widow: Designed in 1940, tested 1941, production 1944; first night fighter; twin-boom configuration, radar, heavy armaments; models A, B, C; final model F-15A "Reporter;" total production run + 700.

Republic P-47 Thunderbolt: Designed 1940, tested 1941, production 1941; successor to P-36, P-40; largest, heaviest fighter aircraft of World War II; considered to be able to absorb punishment; models B,C,D,E,N (N designed specifically for use in the Pacific); total production run 15,683 (three transferred to USSR via ALSIB).

Light Tactical Bomber

Douglas A-20 Havoc: Designed 1939, tested 1939, production 1940; one of the most common and versatile aircraft used in World War II; the USAAF designation was A-20; the RAF dubbed it the Boston (in bomber configuration) and the Havoc (in ground support/night fighter configuration); the USAAF night fighter was also known as the P-7, while the photoreconnaissance version was the F3; models C, G, H, J, K (H for Lend Lease); total production run 7385 (3125 transferred to USSR, 1363 via the ALSIB route).

Douglas A-24: Designed 1938, tested 1940, production 1940; the Navy version was known as the SBD Dauntless, which was very successful as a carrier-based dive-bomber, though less successful in the USAAF version; models: Navy 1, 2, 3, 4, 5, 6; Army A (=4), B (=5); total production run 5936.

Lockheed PV-1 Ventura: Designed 1940, tested 1941, production 1941; radar-equipped; developed from Lockheed commercial model 19 for RAF; USAAF version B-34; Navy version Ventura; used in Kuriles operation; total production run \pm 1600.

Lockheed PV-2 Harpoon: Designed 1943, tested 1943, production 1944; modified from PV-1 with a longer wing span, greater fuel capacity, greater tail area and improved radar; used on Navy patrol and bombing missions, Kuriles operations; model PV-2, PV-2D; total production run 566.

Medium, Heavy Strategic Bombers

Boeing B-17 Flying Fortress: Designed 1934, tested 1935, production 1936; first modern heavy bomber used by USAAF; slow with relatively short range, low payload capacity, but considered reliable; models B, C, D, E, F, G (B, E, G used in Alaska); total production run 12,731; used for bombing, recon, search and rescue and cold weather testing

Boeing B-29 Superfortress: Designed 1940, tested 1942, production 1944; considered the best technical bomber of World War II, though deployed late for USAAF Pacific use; no wartime duty in Alaska, though stationed there in the post-war era; model A; total production run 3970.

Consolidated B-24 Liberator: Designed 1937, tested 1939, production 1940; forward bomber tricycle landing gear, Davis laminar contour wing; long range; largest production run of any U.S. aircraft in World War II; less favored than B-17, but more versatile; models C, D, E, G, J, L, M (D most common in Alaska); total production run 18,188; other versions: LB-30, British Lend Lease; F-7 photoreconnaissance ("Blue Goose"); A-22 navigator trainer; C-87, transport; C-109, fuel transport.

Douglas B-18 Bolo: Designed 1934, tested 1935, production 1936; twin-engine, low-wing monoplane, metal skin; the standard bomber of the USAAF as of 1939 although obsolescent; model A; used for patrol, transport and reconnaissance in Alaska early in the war; total production run 350.

Fairchild Bolingbroke: Designed 1934, tested 1936, production 1937; twin-engine, low-wing monoplane; in Britain called the Bristol Blenheim; licensed to Fairchild of Canada, which produced Mk I, II, II, and IV; total production run (Canada) 676; fourteen medium two-engine Bolingbrokes were stationed at Annette Island, operated by RCAF Number 115 Bomber Squadron.

Martin B-10: Designed 1932, tested 1933, production 1934; first twin-engine mid-wing, metal skin monoplane with internal bomb carriage; obsolescent bomber in production until 1939 for the USAAF; model B; used for patrol, transport, and reconnaissance during the buildup; total production run 118; ceased production 1936.

Martin B-26 Marauder: Designed 1939, tested 1941, production 1941; high-performance, high-wing load design, requiring highly-skilled

pilots; known as the "Widow Maker"; adapted for torpedo bombing by USAAF; considered ill-adapted for Alaska; models A, B, C, F, G (B used in Alaska); total production run 5157.

North American B-25 Mitchell: Designed 1939, tested 1941, production 1941; first modern medium bomber, versatile; models A, B, C, D, G, H, J; total production run + 11,000 (+ 900 transferred to USSR, 732 via ALSIB); used primarily in Kuriles campaign.

Observation/Utility

Beech C-45 Expediter: Military version of Beech B-18S; production 1941; versions: AT-7 navigational trainer, AT-11 bomber trainer, F-2 photorecon, JRB Navy; total production run + 4000.

Beech UC-43 Traveler: Military version of Beech B-17, the first commercial Beech plane; tested 1939; production 1941; biplane with retractable landing gear; USAAF designation UC-43; Navy designation JB-1/CB-1; total military production run 300; more requisitioned from among civilian models.

Consolidated PBY Catalina: Designed 1933, tested 1935, production 1936; umbrella wing design; slow with low maneuverability, but reliable; in use until 1950s, 1960s; versions: 1, 2, 3, 4, 5, 5A, 6A, PBN-1 (Nomad); USAF designation OA-10; PBY-5A amphibious model used in Alaska; built by Vickers and Boeing in Canada as well as by license in USSR; total production run 3290 (plus USSR license manufacture; 30 transferred to USSR via Kodiak route).

Consolidated PB4Y Privateer: tested 1943, production 1944; Navy reconnaissance/subchaser version of B-24, modifications included fuselage, tail, engine housings and nose turret; model 2; total production run 977.

Curtiss SOC-1 Seagull: Designed 1932 (?), tested 1933, production 1934; Navy biplane designed for catapult-launch from shipboard and/or land; last biplane used by Navy; last ship-board reconnaissance plane; models 1, 2, 2A, 3, 3A, 4; also built by Navy Air Facility as SON-1, 1A; total production run 326; production ended 1938, but used throughout World War II.

Douglas O-38 Owl: Army reconnaissance biplane; first USAAF plane assigned to Alaska, Ladd Field Cold Weather Testing Detachment; Alaskan example in US Air Force Museum.

Douglas 40A-5 Dolphin: Army experimental observation amphibious aircraft.

Douglas OA-5 Pelican: Army production observation amphibious aircraft.

Douglas C-26: Army amphibious reconnaissance aircraft; used for prewar mapping in Alaska.

Grumman J2F Duck: Production 1933; Navy float biplane with retractable landing gear; version: JF, J2F-1, 2, 3, 4, 5, 6; total production run 567; USAF designation OA-12A.

Grumman JRF Goose: Designed 1937, tested 1938, production 1939; Navy high-wing, twin engine flying boat; used for transport, reconnaissance; models 1, 1A, 2, 3, 4, 5, 6B/IA (lend lease); total production run 256.

Noordyun UC-64 Norseman: Began commercial service 1935; only 17 sold by Canadian manufacturer until 1940, when RCAF ordered 38 and USAAF ordered 746; designated YC-64 (experimental), UC-64A production; Navy designation JA-1; float/wheel/ski configurations; production ended 1960; total production run 918; still in use.

North American AT-6 Texan: Design 1935, testing 1937, production 1940; first advanced trainer; versions: 6A, B, C, D, F; Navy ANJ; RAF Harvard; licenses to Sweden, Canada, Australia; total production run +15,000.

Piper L-4 Grasshopper: Military version of Piper Cub; production 1941; total production run +5000.

Stinson L-1 Sentinel: Military version of Stinson 105 Voyager; production 1942; total production run +3000.

Vought OS2U Kingfisher: Designed 1937, tested 1938, production 1940; Naval ship-based float reconnaissance plane; versions: 1, 2, 3; total production run 1519.

Transport/Civil

Curtiss C-46 Commando: Designed 1937, tested 1940, production 1942; largest, heaviest two-engine USAAF plane in World War II; good high altitude performance; used in Pacific exclusively; versions: A, D, E, F, G; one transferred to USSR via ALSIB; total production run 3200.

Douglas C-47 Skytrain: Designed 1935, tested 1935, production 1936; perhaps the best aircraft ever engineered; versions: USAAF C-47B for cargo, C-53 Skytrooper for personnel, RAF Dakota, civilian DC-3; Navy RD4; total production run +15,000; 10,123 for military use; 2000 USSR license (710 transferred to USSR via ALSIB); 200 Japanese license pre-war; 2000 RAF; 800 civilian.

Douglas C-54 Skymaster: Designed 1938, production 1942; from four-engine DC-4; Army C-54A, Navy R5D; total production run +1100.

Lockheed C-56 Lodestar: Production 1940; from commercial Lockheed 18; requisitioned by Army in World War II; different engines - different designations (C-56, C-57, C-59); military production C-60; USAF designation O-49; total production run 325.

Lockheed A-29: Designed 1937; from commercial Lockheed 14 Electra used until 1943; requisitioned civil aircraft used; total production run +2000.

Additional civil aircraft used in World War II in Alaska:

Travelaire
Ford Trimotor
Stinson Trimotor
Bellanca
Fairchild 24
Boeing 80-A

Japanese

All Japanese planes were given type numbers to correspond with their year of adoption: Type 0 corresponds with 1940, Type 97 with 1937, Type 2 with 1942. Originally the A6M was known as the "Zero," but with the proliferation of aircraft types, the U.S. adopted a system of code names, using male names for fighters and floatplanes and female names for bombers, land-based reconnaissance and floatplanes.

fighter/pursuit

Mitsubishi A6M Reisen: Designed 1937; tested 1939; production 1940; highly successful, maneuverable land and carrier-based aircraft; primary fighter available 1941-1942; in Alaska involved in attack on Dutch Harbor; Akutan Reisen first example to be captured by US; models 2, 3, 5, 8; Zeke Allied code name; also known commonly as Zero from Type Zero; total production run 10,449.

Nakajima A6M: Design 1940, production 1942; float version of Reisen code-named Rufe; Type 2 heavily used in Aleutians; model 2-N, total production run 327.

Nakajima Ki43 Hayabusa: Designed 1937; tested 1939, production 1941; "butterfly" wing flaps for combat maneuverability; more in use than any other Army combat plane; Japanese name Hayabusa (peregrine falcon); code-named Oscar; Type 1; models Ia, Ib, IIa, IIb, Kai, III; total production run 5919.

light tactical bomber

Aichi D3A: Designed 1936, tested 1938, production 1939; dive bomber with elliptical wing, fixed landing gear design; code-named Val; Type 99; sank more Allied shipping than any other Japanese plane; involved in Dutch Harbor attack; models A, A2; total production run 1495.

Nakajima B5N: Designed 1935, tested 1937, production 1937; torpedo/conventional bomber; carrier-based; code named Kate; Type 97; involved in Dutch Harbor attack; models N1, N2; total production run 1149.

medium strategic bomber

Mitsubishi G4M: Designed 1937, tested 1939, production 1941; high speed, long range effective bomber; code-named Betty; Type 1; also known as the "Flying Cigar" because of its profile; involved in defense of Attu and Kiska (based in Kuriles); models 1, 2, 3; total production run 2446.

observation/utility

Aichi E13A: Designed 1938, production 1940; code-named Jake, Type 0 most important floatplane scout; models 1, 1a, 1b; total production run 1418.

Kawanishi H6K: Designed 1933, tested 1936, production 1937; all metal, four-engine, umbrella wing seaplane; designed to be superior to US models; vulnerable due to lack of armor, self-sealing gas tanks, but reliable, long range; code-named Mavis; Type 97; models 4, 5, 8; total production run 215.

Mitsubishi F1M: Designed 1934, tested 1936, production 1940; catapult-launched Navy scout float biplane; code-named Pete; Type 0; models 1, 2, 2-K; total production run 1118.

Nakajima E8N: Designed 1933, production 1935; catapult-launched Navy scout float biplane; code-named Dave; Type 95; production ceased in 1940; obsolescent design, but more maneuverable than competing monoplanes; model 1, 2; total production run 755.

Yokosuka E14Y: Production 1940 Navy forward reconnaissance plane; float monoplane with wood frame, fabric skin; code-named Glen (Type 0), it could be stored partially assembled aboard submarines; model 1; limited production run.

C.4 Evaluating the Significance of Downed Aircraft in Alaska

As with other properties and property types discussed in section 4.0 of this report the criteria for the evaluation of significance (and eligibility for the National Register of Historic Places) as set forth in 36 CFR 60 apply:

The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons significant in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.

However, two qualifying considerations must be taken into account with regard to downed aircraft. Properties which have been moved from their original locations, and properties which have achieved their significance within the last 50 years are generally not considered eligible for the National Register.

The principal reason for placing eligibility restrictions on moved properties is that the significance of properties "is embodied in their locations and settings as well as in the [properties] themselves. Moving a property destroys the relationship between the property and its surroundings" (NPS 1982:49). The "setting" of downed aircraft is the crash site, and two World War II aircraft in place at their crash sites in Alaska have been placed on the National Register. At least two other aircraft, the B-29s "Enola Gay" and "Bocks Car" which have been moved to museums have been suggested for inclusion in the War in the Pacific NHL, but no final decision on their National Register eligibility has yet been made. The "moved properties" qualifier is of special concern for the reasons noted in the following sections on management considerations and recommendations where the need to consider moving significant aircraft from their "settings" is discussed.

Moved downed aircraft may still be considered significant if they 1) retain sufficient historic features to retain integrity of design, workmanship, feeling and association to still convey their original significance, b) can be demonstrated to be the surviving object most importantly associated with a significant historic event or person ("most importantly associated" is taken to mean that it must be the surviving property that is most closely associated with the event or person) or c) are positioned in relation to their new site(s) as they were positioned at their historic location, and if the setting and the general environment of the old and new sites are similar. Also of note is the fact that aircraft, like other properties designed to move during their historic use, can still be significant if relocated to a historically appropriate setting (NPS 1982: 49-52).

The 50 year criterion for National Register eligibility is more easily dealt with. Properties that have achieved significance within the last 50 years can qualify if they are of "exceptional importance." This phrase can be applied to "an entire category of resources so fragile that survivors of any age are unusual." Of note is the fact that the phrase "exceptional importance" does not necessarily mean national significance. It is a measure of a property's appropriate (historic) context, whether that is local, state or national (NPS 1982: 62-66). Individual aircraft of World War II vintage (and by extension aircraft types) which saw service in Alaska during the war would therefore potentially be of "exceptional importance" since it can be demonstrated they are part of an entire category of resource that is so fragile that survivors of any age are in most cases unusual.

In determining the level of significance - national, state, or local - the history of the specific aircraft and what is presently known about the aircraft type must be considered. It ideally should be determined into which of the following classes the aircraft falls:

- 1) Aircraft lost to enemy action
- 2) Aircraft lost to other causes while in wartime service
- 3) Aircraft which saw wartime service but which were lost in the post-war period

- 4) Aircraft of a type which saw wartime service but which were not themselves involved in wartime service (in most cases because they were constructed at the end or after the war).
- 5) All other aircraft

Aircraft falling within the first three groups are potentially significant at at least the state level of significance by virtue of their association with the Allied Military Operations and/or Transportation/Logistics themes of the Alaska in World War II historic context. Individual aircraft falling within the fourth group which are one of few surviving examples of a specific type might be of national significance in terms of the role played by that type in World War II or because of the type's significance in the history of aviation or in aeronautical engineering. Group five aircraft, particularly those representing types designed prior to the war but which did not see wartime service, should be evaluated in terms of their significance to the history of aviation or aeronautical engineering only.

In order to be significant, downed aircraft must also possess "integrity." Analysis of integrity involves two tasks: 1) documentation of the aircraft's history, and 2) physical inspection of the aircraft and/or crash site. The problems associated with the evaluation of integrity of location and setting for downed aircraft have already been noted. The concept of integrity of the qualities design, materials, and workmanship, are not overly useful for downed aircraft of World War II vintage. It is possible that a particular aircraft which saw service during World War II could have been so modified for post-war service prior to its loss that it no longer retains integrity of design or materials in terms of its significance in relation to the World War II in Alaska historic context. However, the relative scarcity of representatives of the property-type may mean that it still possesses adequate integrity in terms of other historic contexts not considered here, eg. the history of aviation technology.

The two last qualities important in assessing integrity are feeling and association. "Feeling is the quality a historic resource has in evoking the aesthetic or historic sense of a past period of time...Association is the direct link between a property and an event, or person, and so on, for which the property is significant" (NPS 1982:37). Feeling "depends upon the presence of physical characteristics to convey the historic qualities that evoke feeling" (NPS 1982:37). Crash sites at which recognizable and identifiable aircraft are apparent clearly possess integrity of both feeling and association. World War II vintage aircraft recovered and moved to a proper setting and which either have or have not been restored may also still possess integrity in regard to these qualities.

C.5 Management of Historic Downed Aircraft

C.5.1 Background

While the role of aviation in the development of Alaska is of primary importance and the military presence in the area was largely established to support aerial operations, there had been little concern with the remains of downed aircraft except on the part of a relatively few buffs. During the

years from the end of World War II until the 1970s, there was little in the way of public interest and awareness or official policy regarding the treatment of such remains, and many were lost to deterioration, destruction and unofficial salvage. There are numerous private organizations in Alaska concerned with aviation history, but the recent activity under review begins in 1977 with the founding of an avocational group designed to recover World War II downed aircraft, the Alaska Historical Aviation Society (AHAS). By 1978, land managing agencies within the state had begun to recognize that the downed aircraft issue required an official strategy and policy to deal with these special resources.

The Bureau of Land Management (BLM) as the main custodian of federal lands in Alaska took the lead in proposing procedures for downed aircraft treatment. A meeting was held in May, 1978, at which BLM, the Alaska Air Command (AAC), the US Fish and Wildlife Service (USFWS), the Alaska Division of Land and Water Management, the Heritage Conservation Recreation Services (HCRS) (now part of NPS), the Federal Aviation Administration (FAA), the Alaska Division of Parks, the National Park Service (NPS) and the Regional Office of the Solicitor, Department of the Interior (DOI) were represented. The preliminary agenda for the meeting called for a determination of ownership and responsibility for downed aircraft; an education program to inform agency personnel and the public of the significance, dangers and penalties for unauthorized disturbance of downed aircraft; and establish procedures for regulated salvage. BLM suggested that the latter follow the routine established for other cultural resource-related permit activities, requiring the following: (1) an Environmental Analysis and special temporary use permit (TUP), (2) proof of military non-objection for the salvage of military aircraft remains, (3) an Antiquities Act permit for older aircraft, and (4) Section 106 compliance, involving determination of eligibility to the National Register (which involves consultation with the SHPO and the ACHP). BLM subsequently expanded its policy to include a general requirement for curation of remains within Alaska, granting of public access and restoration to be in harmony with the original character of the aircraft. Personnel were instructed to post such remains as were discovered on BLM managed lands in the course of management activities.

During the period several incidents occurred pertaining to downed aircraft. A section of a P-39 wing with Red Army star markings was recovered near Nome and donated to the US Air Force Museum in Dayton, OH. A B-24D Liberator on Atka and a P-38G Lightning on Attu were entered on the National Register. An OS2U Kingfisher was illicitly salvaged from US Forest Service land on Afognak Island by private parties. In the latter case, the Navy obtained a court order impounding the plane in Seattle, and a Judge Advocate's ruling establishing Navy ownership was issued. The aircraft was placed in the Navy's Air Museum in Pensacola, FL. No charges were brought against the salvage operators. A J2F-6 Duck reportedly was inadvertently destroyed on USFWS lands on Adak. A second private organization, the United States Historical Aircraft Preservation Museum (USHAPM) was also formed in 1980. The AHAS subsequently failed to renew its listing with the office of the Alaska Secretary of State, and the USHAPM recently included the AHAS name in its own title. The original AHAS is, however, still extant. The Alaska Air National Guard (ANG) and out-of-state private museums also expressed interest in acquiring and displaying downed aircraft from Alaska.

In October, 1980, US Senator Ted Stevens requested a statement on policy regarding downed aircraft from DOI. The Washington, DC office of the Heritage Conservation and Recreation (HCRS) (now part of NPS) responded that ownership of downed aircraft rested with the property owner/land manager and could be disposed of via recourse to the stipulations of the Antiquities Act of 1906 and Executive Order 11593 if adjudged an "object of antiquity" or according to General Service Administration (GSA) deaccessioning procedures found in the Abandoned Property Act. The Alaska Land Managers Cooperative Task Force (ALMCTF) in Anchorage developed an alternative approach in consultation with the Departments of Defense and Interior. Their findings were that the Navy retains ownership of its aircraft of whatever vintage unless deaccessioned, but that Air Force ownership presents a more complicated situation. As successor to the Army Air Force, the US Air Force inherited the property of that service, but has sought to limit its potential liability with regard to such preexisting property. According to the Air Force, it reserved the right to exercise or deny its rights to ownership at its option, though ownership is technically retained until formally abandoned. Abandonment must occur through formal procedures on a case-by-case basis.

During the early 1980s, this latter position formed the operative assumption for management of Alaskan aircraft remains, and the ALMCTF, acting on the advice of DOI's Regional Office of the Solicitor, deemed that downed aircraft were available for salvage if they were not imbedded in the ground (evidence of recency) or were not "objects of antiquity" (cultural resources). Historic downed aircraft were accorded presumptive status as objects of antiquity as per the Antiquities Act of 1906. Further, unless formally abandoned, aircraft remained the property of the military indefinitely; could not be abandoned without Section 106 review; were the responsibility of the respective military service; were recoverable through the appropriate permitting procedures of the managing agency; and could only be removed to a public access repository.

In 1981, the USHAPM asserted a claim to all downed aircraft in Alaska as a means of preventing such remains from being removed from the state. The USHAPM also received a permit from the Navy for the recovery of certain aircraft for restoration and public display; the permit was for a one-year period, and no aircraft were recovered. The organization did become involved in the salvage of a Lend Lease P-39 in the interior. The USHAPM subsequently attempted to have introduced state legislation to halt the removal of World War II artifacts from state lands and bar their removal from the state in general. The legislation failed to pass, since the Governor's office contended that adequate general protective statutes already existed.

In October, 1983, the Alaska State Museum and the Office of History and Archeology, Division of Parks and Recreation, sponsored a conference on the treatment of downed aircraft as a cultural resource. Besides the personnel associated with the sponsoring agencies, the Governor's and State Attorney General's offices were represented, as were the AAC, the USFWS, the Civil Air Patrol and a variety of interested private individuals, museums and aviation associations. Recommendations included: (1) the establishment of a committee to develop criteria, set priorities and assess significance of historic aircraft remains; (2) further study of ownership status of historic aircraft remains; (3) development of standards (using archeological and FAA crash investigation techniques) for aircraft recovery; (4) development of a comprehensive inventory of downed aircraft with a focus on in situ

preservation, rather than recovery; (5) development of regional repositories/museums as opposed to a central repository for the curation and display of such remains, though an Anchorage facility was also recommended. The Alaska Museum of Transportation and Industry was cited as a candidate facility, and that institution has since requested budgetary assistance to develop holdings of historic aircraft.

In April, 1985, the USHAPM issued a document entitled Public Notices 1 and 2 claiming title to all military downed aircraft in the state lost prior to 1961 (The USHAPM also asserted salvage rights over military artifacts and Japanese shipping sunk in Alaskan waters during World War II). In certain cases, the USHAPM arranged to have expired FAA registrations of aircraft transferred to itself. An opinion issued by the Regional Office of the Solicitor, DOI, stated that these claims lacked legal merit (assertion is not an acceptable means of establishing ownership, and registration is a separate issue from title), however a review of legal status produced a new interpretation of ownership with implications for the management of downed aircraft.

DOI Solicitor Dennis Hopewell's opinion, issued August 19, 1985, argued that recent case law interpretation of the 1906 Antiquities Act limited "objects of antiquity" to "very old" items, generally those associated with the aboriginal inhabitants of an area. While acknowledged as cultural resources eligible for inclusion on the National Register, historic aircraft are not accorded blanket protection under the Antiquities Act. Under common law, if an object is abandoned, it is open to claim by third parties if no superior claim is established. Although legally, military property should be formally abandoned and deaccessioned through the Department of Defense Property Disposal Office (not the GSA), the Air Force has stated that it considers aircraft under its jurisdiction and lost prior to 1961 to be abandoned, thus opening the way for third party claims. With no presumptive protection under the Antiquities Act and de facto abandonment by the original owner, Federal agencies, which have management responsibility for the vast bulk of Alaska land, can establish jurisdiction over such property by "taking possession" of the remains in accordance with 40 USC S 484 (m). This requires physical inventory and on-site posting of such remains plus documentation, a monumental task for the agencies involved.

Regardless of ownership, if downed aircraft potentially eligible for inclusion on the National Register are located on the public domain, they are subject to the provisions of the NHPA of 1966, and therefore become the responsibility of the respective agencies. The guidelines established by BLM requiring that abandonment be documented and attested to by the abandoning agency/original owner, that removal be by temporary use permit issued by the affected managing agency and that Section 106 procedures and compliance be followed were held to be appropriate for dealing with downed aircraft. Thus remains on federally administered lands are still under the effective jurisdiction of the various agencies, though the legal status and ultimate disposition of remains is unclear because of the question of ownership.

Remains on state lands are protected by similar permit requirements administered through the SHPO office. No protection exists for remains located on private lands unless a state or federal agency is involved in the development of such lands, however private lands constitute a very small portion of Alaska. The status of remains on Native corporation and conveyed

lands is unclear, although presumably the corporation is the owner of abandoned resources with rights of disposal as per its corporate charter. The primary areas of concern are the Northwest Staging route corridor (generally under BLM management) and the Aleutian Chain (predominately under USFWS management). Both agencies have been instructed by DCI to inventory and post downed aircraft within their respective jurisdictions.

As evidence of the concern and active management role of federal agencies, the USFWS is currently investigating illicit removal of parts from downed P-40s on Unalaska Island which occurred in the fall, 1985, under the theory not of agency responsibility for the primary remains but that the salvage disturbs wilderness resources and therefore must be restricted to protect the surrounding environment.

C.5.2 The Data Base

Table C-1 presents a listing of known and potential sites of downed aircraft of World War II vintage in Alaska. It does not purport to be a complete listing of all such aircraft and the accuracy of locational data is highly variable. The list was compiled from two principal sources: 1) a computerized printout prepared by the Elmendorf AFB Rescue Coordination Center and obtained from the Alaska SHPO and 2) a listing of downed aircraft contained in ACOE (1977). There is no overlap between these two sources. Several additional sites were identified from primary and secondary sources. The Elmendorf AFB Rescue Coordination Center does not list downed aircraft for the Aleutian Islands or west of Cold Bay on the Alaska Peninsula. Listings for those areas are maintained by the Coast Guard RCC at Kodiak. However, the ACOE list was compiled via checks of "military search and rescue sections" supplemented by records of downed aircraft furnished by Reeve Aleutian Airways. It is therefore likely that pertinent data available from the Coast Guard was included.

C.5.3 Management Considerations for Downed Aircraft

As with any program for the management of historic artifacts, the primary consideration in this case is the weighing of alternate uses of a resource with respect to the research, information and/or educational value of the resource to present and future generations. Many pragmatic considerations enter into such management decisions. With Alaskan downed aircraft, a primary consideration is the cost of managing the resources, and cost is, in the current situation, determined largely by accessibility. Given the interest level in, and monetary value of, downed World War II aircraft, it is a given that known, accessible aircraft have already been "picked over." Aircraft which remain to be managed are there due largely to their inaccessibility and obscurity. If private parties are unable to gain physical access (leaving aside the question of legal access), it will be equally difficult for public parties. Distance, terrain, climate and weather, which caused so many of the aircraft to be lost in the first place, mean that survey to locate unknown downed aircraft is an extremely chancy and difficult undertaking.

Another consideration involves where the aircraft went down. All combat losses were in the Aleutians where the only combat actually occurred. Most planes which were shot down or otherwise lost due to action were lost over water. All known Japanese aircraft lost in the Battle of Dutch Harbor, with the exception of the Akutan Zero, were lost at sea, with only flotsam being

Table C-1. Reported Downed Aircraft of Word War II Vintage in Alaska

<u>Aircraft</u>	<u>Reg. #</u>	<u>Crash Date</u>	<u>General Location</u>
1. OA-10 Catalina	V-4032	8/6/47	Unimak Island
2. PBY42 Privateer	59695	11/4/48	Kodiak Island
3. C-47 Skytrain	66631	11/4/48	Sitka
4. C-54 Skymaster	-2469	1/26/50	Aishihik
5. NY4/5 Norseman	88733	5/9/50	Colville River
6. C-54 Skymaster	NA	7/21/51	Yakutat
7. B-25 Mitchell	VC-323	6/30/52	Whitehorse (RCAF)
8. NY-4/5 Norseman	61352	7/27/51	Seward Gap
9. PV-2 Harpoon	7266C	6/14/67	Ugaskik
10. A-20 Havoc	13590	N/A	Unalakleet
11. C-54 Skymaster	NA	1943	Katmai
12. C-54 Skymaster	NA	NA	Prince William Sound
13. OA-10 Catalina	04410	NA	Unalaska Island
14. C-47 Skytrain	NA	10/5/74	Chirikof
15. B-24 Liberator	40910	12/21/43	Yukon-Charlie
16. OA-10 Catalina	7297	3/10/43	Kodiak Island
17. A-20B Havoc	13590	3/14/43	Nome
18. A-20 Havoc	53987	6/27/43	Golovin
19. A-20 Havoc	53761	6/27/43	Golovin
20. B-17F Flying Fort	30861	9/25/43	McGrath
21. P-39 Airacobra (2)	3294 3276	2/11/44	Big Delta
22. P-40 Warhawk	NA	WWII	Port Heiden
23. B-25 Mitchell	03728	2/28/44	Unalakleet
24. L-1 Stinson	00193	4/5/44	Chicken
25. P-39 Airacobra	030BE	8/12/44	Northway
26. C-47A Skytrain	15376	9/18/44	Mt. Deception
27. P-61 Black Widow	39402	2/23/45	Fairbanks
28. C-54B Skymaster	72421	10/29/45	Chugach Mountains
29. C-47 Skytrain	NA	1946	King Salmon
30. OA-10 Catalina	33995	9/1/46	Dickey Lakes
31. OA-10 Catalina	NA	5/47	Dago Lake
32. P-51 Mustang	64285	8/4/47	Kenai
33. C-47 Skytrain	NA	3/48	King Solomon
34. P-51 Mustang	64241	6/15/48	Kenai
35. P-39 Airacobra	40046	2/15/44	Susitna Basin
36. F-82 Twin Mustang	76497	1/50	Alaska Range
37. C-47 Skytrain	17299	9/11/50	Mt. Susitna
38. C-47 Skytrain	-8134	9/7/51	Eielson A.F.B.
39. B-17G Flying Fort	85505	9/10/51	Talkeetna
40. C-47 Skytrain	-6249	1/12/52	Circle
41. C-47 Skytrain	-8069	4/21/52	Merrill Pass
42. C-47 Skytrain	05895	2/3/54	Deadman Mtn.
43. C-47 Skytrain	15595	6/55	Sitkinak
44. C-47 Skytrain	45983	9/1/55	Denali
45. C-47 Skytrain	15995	6/3/57	McGrath
46. B-29 Superfort	70039	11/15/57	Talkeetna Mtns

Table C-1. Reported Downed Aircraft (Continued)

<u>Aircraft</u>	<u>Reg. #</u>	<u>Crash Date</u>	<u>General Location</u>
47. C-54 Skymaster	50607	12/22/58	Kiana
48. B-29 Superfort	NA	NA	Becharof Lake
49. C-47 Skytrain	NA	NA	Becharof Lake
50. L-5 Sentinel	NA	NA	Alaska Range
51. C-47 Skytrain	8620	NA	Rampart
52. B-24 Liberator	NA	6/8/60	Fairbanks
53. B-24 Liberator	NA	NA	Fairbanks
54. P-38 Lightning	7253	NA	Lake Louise
55. PB42 Privateer	66298	8/51	Amak Island
56. B-17 Flying Fort	NA	NA	Pavlof
57. P-38 Lightning	26946	NA	Prince William Sound
58. B-24 Liberator	23873	NA	Donnelly
59. B-10 Bolo	NA	1940	Big Mountain
60. C-54 Skymaster	72611	9/28/69	Kiana
61. P-39 Airacobra	3-2641	1943	Big Delta
62. B-18	NA	WW II	King Cove
63. B-18	NA	WW II	King Cove
64. P-40 Warhawk	NA	WW II	Unalaska Island
65. OA-10 Catalina	NA	WW II	Unalaska Island
66. C-47 Skytrain	NA	3/18/45	King Cove
67. P-40 Warhawk	NA	NA	Unalakleet
68. P-40 Warhawk	NA	NA	Unalakleet
69. NY-4/5 Norseman	50723	4/24/54	Kenai
70. C-54 Skymaster	NA	1946	Chistochina
71. C-47 Skytrain	NA	1946	Nome
72. C-64 Norseman	54048	2/20/47	Big River
73. C-64 Norseman	NA	NA	Farewell
74. C-54 Skymaster	95422	3/12/48	Mt. Sanford
75. C-47 Skytrain	91006	1/20/49	Kenai
76. NY-4/5 Norseman	49979	1/13/51	Cordova
77. NY-4/5 Norseman	62117	9/10/51	Chaniliut
78. C-47 Skytrain	91008	9/8/54	Spurn Canyon
79. L-5 Stinson	49458	8/19/55	Talkeetna Mtns
80. NY 4/5 Norseman	62367	6/23/57	Ambler River
81. C-46 Commando	1302N	5/13/58	Driftwood Bay
82. NY-4/5 Norseman	651	9/18/59	Franklin Mnts
83. C-46 Commando	NA	NA	Noatak
84. PB442 Privateer	7979A	7/22/68	McGrath
85. C-46 Commando	67982	NA	North Slope
86. B-25 Mitchell	90882	6/27/69	Fairbanks
87. NY-4/5 Norseman	NA	1957	Barter Island
88. C-47 Skytrain	75430	5/21/20	Deadhorse
89. C-54 Skymaster	33373F	7/15/81	Kenai
90. B-24 Liberator	NA	WW II	Atka Island
91. B-24 Liberator	NA	WW II	Ilak Island
92. P-38 Lightning	NA	10/28/46	Tanaga Island
93. OA-10 Catalina	NA	10/28/46	Tanaga Island
94. PB42 Privateer	NA	8/31/51	Little Tanaga Island
95. B-24 Liberator	NA	WW II	Semisopochnoi Island

Table C-1. Reported Downed Aircraft (Continued)

<u>Aircraft</u>	<u>Reg. #</u>	<u>Crash Date</u>	<u>General Location</u>
96. B-24D Liberator	40-2367	9/12/42	Atka
97. A-20 Havoc	NA	WW II	Kiska
98. B-24 Liberator	NA	WW II	Great Sitkin
99. P4Y Catalina	NA	WW II	Kiska
100. PBY Catalina	NA	WW II	Kasatochi
101. OA-10 Catalina	NA	WW II	Atka
102. P-38 Lightning	NA	WW II	Buldir
103. PV-1 Ventura	NA	9/5/46	Agattu
104. P-38 Lightning	NA	WW II	Alaid
105. C-47 Skytrain	NA	9/5/46	Attu
106. P-38G Lightning	13400	5/43	Attu
107. P-40 Warhawk	NA	WW II	Umnak Island
108. OA-10 Catalina	NA	WW II	Unalaska Island
109. P-40 Warhawk	NA	WW II	Unalaska Island
110. A6M Reisen	NA	5/42	Akutan
111. P-39 Airacobra	NA	NA	Mt. Mckinley
112. P-63 King Cobra	70190	8/12/44	Unalakleet
113. ?	NA	NA	Umnak*
114. B-17 Flying Fort	NA	NA	Cold Bay **

* A twin-engined, four-blade propeller, aircraft (a B-26, a PV-1 or P-61); observed by Envirosphere personnel; photograph in Cohen (1981)

** Referenced ACOE (1984)

recovered despite some effort made at salvage (Draft History 1944:28). The US aircraft lost in searching for the Japanese fleet simply failed to return, with the presumption being that in most cases they too were lost over water. With turbulence at the passes between the Pacific Ocean and the Bering Sea and the depth of the Aleutian Trench on the Pacific side, it is unlikely that aircraft lost over water could be located or recovered if located. An exception might be aircraft downed in relatively protected areas, such as moored Japanese seaplanes reported sunk in Kiska Harbor. While currents would militate against mechanical underwater preservation (and recovery), the low temperatures would aid in the chemical preservation of any remains which might have come to rest intact. Any activities which involve offshore disturbance should take into account the possibility of encountering downed aircraft. The probability that the majority of the most significant downed aircraft were lost at sea makes those found on land even more important due to the scarcity factor introduced by a reduced sample.

Another consideration concerns salvage versus preservation in place, and the degree of attention given in either treatment. There exists a body of opinion which basically states that downed aircraft should be left in place as "monuments" to the flyers and others who served (e.g. Palmer 1981). For perhaps less sentimental reasons, there is a bias within the archeological community given the finite nature of sites to "leave it alone" pending better recovery techniques in the interest of preserving the resource for the future.

The opposite side of this argument is that it is not feasible to arrest the deterioration of downed aircraft in situ in inaccessible wilderness areas. Downed aircraft remains are in many respects more fragile than other classes of artifacts. In order to be functional, aircraft had to have large surface areas, complex mechanical parts, and minimal weight construction. Thus skins, frames and subsystems are liable to deteriorate and corrode rapidly. The trauma of impact plus freeze and thaw mechanical disturbance and, in maritime locations, salinization means that World War II aircraft have a short life expectancy once downed. A further consideration is the fact that downed aircraft are the objects of private treasure-hunters. For example, in 1977 an intact P-40K was reportedly found near Port Heiden. "Only the fabric surfaces were rotted away. The rest of the airframe was intact and complete. Lo, two months later, everything, including the RCAF roundels, had been stripped, leaving a valueless hulk!" (MacArthur 1977). Because the sites are virtually impossible to police, identification and posting may serve to identify such remains for unauthorized salvage. Preservation of downed aircraft remains seems to require their removal from their site of fortuitous deposition.

Other considerations involve what to recover and how to recover it. In few cases will a complete aircraft exist. Crashes, as opposed to hard or emergency landings, tend to result in the mechanical breakage of systems and the scattering of debris over large areas where remains are often further damaged by fire or explosion. Aleutian winds can simply blow away most lightweight skin and other fragments. Destruction inherent in the downing of aircraft was often exacerbated by wartime treatment of such aircraft. Military and civilian contract personnel were, when feasible, employed to locate crash sites and remove bodies and sensitive equipment (bombsights, guns) and/or useful salvage parts (subsystems) so many aircraft were further stripped and broken up on the ground (Boeing News 1943b). Where salvage was not feasible, the aircraft were often destroyed using fire and/or explosive

charges. This treatment policy was continued by the military well into the post-war period to dispose of potential nuisances, hazards and liabilities. Due to downing trauma, post-downing treatment and natural decay, many aircraft may provide little in the way of remains for salvage. Parts may, however, be used to restore other aircraft if the remains are properly handled.

This leads to the consideration of how to recover remains. It is essential that evaluation and recovery be carried out by personnel with expertise in historic aircraft. While military ordnance disposal personnel should be in charge with respect to munitions, there are other potentially dangerous aspects of downed aircraft investigation, such as pressurized oxygen and hydraulic subsystems. Military personnel are trained in modern maintenance and evaluation procedures and generally lack knowledge of historic aircraft, so that they can endanger themselves and/or the remains by improper treatment. Also, most contemporary crash and maintenance investigative procedures are designed to establish the proximate cause of the crash rather than to recover salvage or other information, so that special expertise is required (NTSB, personal communication). In remote areas, not only are logistics a problem but a major consideration - in fact the primary concern of the managing agency - will be that the environment not be adversely affected by recovery. Therefore minimal disturbance in retrieval of maximal information must be a major consideration.

A final consideration involves the order of magnitude of downed aircraft. As noted above, the obvious remains are already gone. Only 112 known or potential crash sites for World War II vintage aircraft were identified during this study (see section C.5.2). The majority of these were lost after the war ended. This represents a fraction of aircraft known to have served and to have been lost in Alaska during the war. Coles (1950:397) notes that the Eleventh Air Force (exclusive of the Navy and the Air Transport Command) lost a total of 214 aircraft between June 3, 1942 and September 30, 1943: 40 to combat and 174 to "operational hazards." The Eleventh Air Force had a high of 359 aircraft assigned to it in August, 1943 (Coles 1950:387), and turnover before and after that period means that many more aircraft served in Alaska during the course of the war. Coles (1950) discusses the loss of 39 specific Army and seven Navy aircraft. Of these seven are cited as having gone down in Siberia during raids on the Kuriles, four are accounted for in the vicinity of Fort Glenn, while one crashed on Attu and one on Great Sitkin. The rest (33) are either stated, or presumed, to have been lost at sea. Of 39 Japanese aircraft mentioned, all but eight reported destroyed on the beach at Holtz Bay, Attu, were downed over water or destroyed while on the water at moorings in the harbors at Kiska and Attu. Cloe with Monaghan (1984:118) report that the Navy's Fleet Air Wing lost 40 aircraft. ACOE (1977:85-86) lists 23 World War II downed aircraft in the Aleutians, six of which were downed after the war. Cohen (1981:46) states, without citing his source, that 133 aircraft were lost in Lend Lease ferrying operations, for a loss rate of 1.6%, though Cloe with Monaghan (1984:154) list loss rates of 0.2% for the Soviet leg and 0.5 for the US leg of the ALSIB route, for a total of about 56 aircraft lost along the entire route of which Alaska represented only a small portion. Heck (1958: 205) notes that few aircraft were actually returned stateside during the war and immediately following the war. Hard field use and a lack of crew and maintenance time to make them airworthy for the return trip, plus their value as parts sources meant that most were either stockpiled or cannibalized, remaining in some form in Alaska.

Of the approximately 60 principal aircraft types identified as having served in Alaska during World War II, only about two-thirds are represented in museum collections worldwide, as catalogued by the Smithsonian Institution, whose list was last updated in 1983. In most cases very few examples of any one type are known (Table C-2).

C.5.4 Recommendations for the Management of World War II Vintage Downed Aircraft in Alaska

In preparing the following recommendations several guiding (but not necessarily inviolate) principals have been employed. These are:

- o first consideration must be given to protection of the resource;
- o the resource should be used in a manner which will allow for its maximum appreciation by the general public;
- o aircraft associated with the World War II in Alaska historic context should generally remain in Alaska; and
- o it may be necessary in some instances to employ less than the optimum management strategy for a particular aircraft in the interest of better protection of the resource class as a whole.

With the above principles in mind the following recommendations are offered:

1. Preservation in place should be considered only when a) the aircraft retains sufficient physical integrity to convey what it is (in other words, parts scattered over a large crash site are not appropriate candidates for in situ preservation), and b) the aircraft is located in association with one of the sites identified as a component of the preservation plan identified in Section 5.0, or is in a location where it can be made available for public interpretation and where its physical security can be reasonably guaranteed, and c) when physical inspection of the aircraft indicates that preservation in place will not result in further physical deterioration or d) when there is a reasonable certainty that funding can be made available for application of conservation measures which would halt or substantially retard further physical deterioration. Cases meeting these conditions are expected to be virtually nonexistent.

2. For all aircraft not meeting the above criteria for preservation in place, or which are for other reasons determined not to be candidates for such preservation, a classification and evaluation process should be utilized to determine the most appropriate management alternative. A suggested system of classification is as follows:

Category 1: Aircraft potentially suitable for restoration and public display.

Category 2: Aircraft lacking physical integrity which contain components (parts) necessary to restore or maintain category 1 or aircraft designated for in place preservation.

Category 3: All other aircraft.

Table C-2. World War II Vintage Aircraft in Museum Collections Worldwide

<u>Designer</u>	<u>Model</u>	<u>No. In Museums</u>
American		
Beech	Expeditor (all models)	45
	C-185	(1)
	D-18(?)	(3)
	D-18S	(11)
	E-185	(1)
	C-45(?)	(7)
	C-45F	(1)
	C-45G	(3)
	C-45H	(6)
	C-45J	(2)
	UC-45J	(7)
	RC-45J	(2)
	(?)	(1)
Beech	Traveler (all models)	5
	(?)-17	(1)
	UC-43/D17	(1)
	UC-43/D75	(1)
	C-17L	(1)
	IC-43/17	(1)
Bell	Airacobra (all models)	18
	P-39	(14)
	P-39Q	(4)
	King Cobra (all models)	3
	P-63 (?)	(2)
	P-63A	(2)
	RP-63C	(1)
	P-63E	(2)
	RP-63G	(1)
Boeing	B-17 Flying Fortress (all models)	26
	B-17D	(1)
	B-17F	(2)
	B-17G	(23)
	B-29 Super Fortress (all models)	24
	B-29(?)	(21)
	B29A	(3)

Table C-2. World War II Vintage Aircraft (Continued)

<u>Designer</u>	<u>Model</u>	<u>No. In Museums</u>
Consolidated	Catalina (all models)	14
	PBY-5	(1)
	PBY-5A	(9)
	PBY	(1)
	PBY-6A	(3)
Consolidated	B-24 Liberator (all models)	9
	B-24(?)	(2)
	B-24D	(1)
	B-24J	(4)
	B-24L	(1)
	B-24M	(1)
Convair	PB4Y-2 Privateer	1
Curtiss	Hawk (all models)	4
	P-6E	(1)
	P-36A	(1)
	75	(1)
	YP-20	(1)
Curtiss	Warhawk (all models)	19
	P-40E	(1)
	P-40N	(18)
Curtiss	Seagull SOC	1
Douglas	Bolo (all models)	3
	B-18A	(2)
	B-18G	(1)
Douglas	Havoc (all models)	4
	A-20G	(3)
	A-20K	(1)
Douglas	Dauntless (all models)	8
	SBD	(5)
	SBD-5	(1)
	SBD-5A	(1)
	SDB-6	(1)

Table C-2. World War II Vintage Aircraft (Continued)

<u>Designer</u>	<u>Model</u>	<u>No. In Museums</u>
Douglas	OA-5 Pelican (all models)	0
Douglas	DC-3 Skytrain (all models)	90
	C-47/R4D/C53	(52)
	R4D-13 Super DC3	(3)
	-(?)-	(6)
	C-47 Dakota	(26)
	LI-2 (Lisunov-built)	(3)
Douglas	DC-4 Skymaster (all models)	9
	C-54/R5D	(8)
	DC-4M (Canadair)	(1)
Grumman	Wildcat (all models)	17
	F4F Martlet I	(1)
	F-4F-4	(2)
	F-4F-8	(14)
Grumman	J2F-6 Duck	4
Grumman	Goose (all models)	4
	G-21	(1)
	JRF	(3)
Lockheed	Lightning (all models)	11
	F5/P-38	(3)
	P-38F	(1)
	P-38J	(2)
	P-38L	(4)
	P-38M	(1)
Lockheed	Ventura (all models)	11
	PV-1	(5)
	RB-37	(2)
	L-37	(4)
Lockheed	PV-2 Harpoon	3
Lockheed	Lodestar (all models)	11
	L-18	(7)
	L-18-08	(2)
	18-56	(2)

Table C-2. World War II Vintage Aircraft (Continued)

<u>Designer</u>	<u>Model</u>	<u>No. In Museums</u>
Lockheed	Electra (all models)	11
	A-29/10A	(5)
	XC-35	(1)
	12A	(3)
	14 Super Electra	(2)
Martin	Marauder (all models)	9
	B-26/RB-26	(5)
	RB-26B	(1)
	B-26C	(1)
	DB-26C	(1)
	B-26G	(1)
Martin	B-10 Bomber	1
Noordyun	Norsemann (all models)	9
	YC-64 Mk IV	(2)
	YC-64 Mk V	(2)
	UC-64A Mk VI	(5)
North American	B-25 Mitchell (all models)	40
	TB-25/B-25	(10)
	TB-25J/VB-25J/B25J	(17)
	B25B	(1)
	B-25C	(1)
	B-25H	(4)
	TB-25N/B-25N	(6)
	B-25J-30	(1)
North American	Texan (all models)	55
	AT-6/SU5	(30)
	AT-6A	(1)
	AT-6D	(9)
	AT-6F	(2)
	AT-6G	(13)

Table C-2. World War II Vintage Aircraft (Continued)

<u>Designer</u>	<u>Model</u>	<u>No. In Museums</u>
North American	Harvard (all models)	47
	AT-6	(31)
	AT-6D	(1)
	AT-6C	(2)
	AT-6H	(2)
	AT-6J	(4)
	AT-6 (Norduy AT-16)	(7)
North American	Mustang (all models)	58
	P-51	(8)
	XP-51	(1)
	P-51A	(1)
	P-51C	(3)
	P-51D	(37)
	P-51H	(2)
	P-51K	(4)
North American	P-36A	(2)
	Twin Mustang (all models)	5
	F-82B	(2)
	XP-82	(1)
	F-82A	(1)
Northrop	F-82F	(1)
	P61C Black Widow	3
Piper	Grasshopper	13
	L-4	(4)
	L 4A	(1)
	L-4B	(5)
	L-4J	(1)
	NE-1	(1)
Stinson	Vigilant L-1	3
Stinson	Reliant (all models)	11
	SR-5	(1)
	SR-6	(1)
	SR-7B	(1)
	SR-8	(2)
	SR-10D	(1)
	Sr-10F	(1)
	SR-10G	(1)
	AT-19	(3)

Table C-2. World War II Vintage Aircraft (Continued)

<u>Designer</u>	<u>Model</u>	<u>No. In Museums</u>
Vought	Kingfisher (all models)	6
	OS2U	(1)
	OS2U-2	(1)
	OS2U-3	(4)
Canadian		
Curtiss	Kittyhawk (all models)	10
	P-40D I	(1)
	P-40E	(8)
	P-40M	(1)
Fairchild	Bolingbroke IV	15
Hawker	Hurricane (all models)	23
	Hurricane	(3)
	Hurricane MkI	(4)
	Hurricane MkII	(1)
	Hurricane MkB	(5)
	Hurricane MkIIC	(5)
	Hurricane MkIV	(2)
	Hurricane MkXII	(3)
Japanese		
Aichi	Val (all models)	2
	D3 A1	(1)
	D3 A2	(1)
Aichi	E13A1 Jake	0
Kawanishi	H6K Mavis	0
Mitsubishi	F1M2 Pete	0
Mitsubishi	G4M Betty	0
Mitsubishi	A6M2/Md/Mg/M7 Zeke	15
Nakajima	B5N1 Kate	0
Nakajima	K1-43-2 Oscar	2
Nakajima	E8N2 Dave	0
Yokosuka	E14Y1 Glen	0

3. A committee charged with the responsibility for categorizing downed aircraft should be established. The committee should consist of 1) a representative of the Alaska SHPO, 2) a representative of the Alaska Historical and Transportation Museum, 3) a representative of the Regional Director of the National Park Service, and 4) for aircraft on public lands, a representative of the state or federal agency having land management responsibilities over the crash site being categorized.
4. All category 1 aircraft brought to the attention of the SHPO should, whenever possible, be recovered. Such aircraft, regardless of the agent undertaking the recovery, should remain within the State of Alaska and be placed in the care of a suitable, publicly administered, curatorial repository. (At the present time, the only identified public repository in Alaska which meets these criteria is the Alaska Historical and Transportation Museum, Inc.).
5. The designated curatorial repository should be given right of first refusal over all category 2 aircraft. In the event that the repository can not or does not desire to accept the aircraft, other public and private repositories and collectors, regardless of their location, should be allowed to submit competing proposals for recovery and utilization of category 2 aircraft. Final decisions should be made by the committee identified in item 3.
6. Category 3 aircraft should not be considered significant in relation to the World War II in Alaska historic context. Responsibility for such aircraft should be vested in the property owner or, for aircraft on public lands, with the land manager.
7. A monetary fund or funds to be devoted exclusively to the recovery and restoration of historic aircraft should be established. No recommendations as to whether this fund should be administered by the state or federal governments, or jointly, can, in the absence of legal input, be made at this time. Separate state and federal funds may be necessary. Potential sources of revenue for this fund are described below.
8. All parties desiring to conduct aircraft or aircraft component recovery operations on public lands require under existing regulations, some form of land use or access permit. Fees should be set for these permits and should be payable to the fund recommended in item 7. The amount of the fee should be equal to some fixed percentage of the dollar cost (including the cost of all donated labor and materials) of the recovery operation. Some provision should be made for waiving the fee in special circumstances.

The recommendations presented above are generally consistent with the Region 7 Policy Regarding Management of World War II Material recently issued by the USFWS (FR 50:5192-3). That policy requires permit applicants to submit a detailed description of their qualifications and the use to which the recovered (aircraft) part(s) will be put. It also allows for consideration of competing applications.

The following additional recommendations, not related to specific crash sites, are also offered:

9. Detailed location data, when available, should be determined for all aircraft listed in or appropriate for listing in Table C-1. Such data is believed to be available for only a limited number of aircraft. Information on aircraft locations should be made available to the appropriate land managers along with detailed explanations of their responsibilities regarding such sites.
10. All known and accessible crash sites on government property should be posted. It is believed that the benefits of posting (detering unintentional disturbance) outweigh potential adverse effects (attracting vandals). The posting of such sites also simplifies potential prosecution of vandals and unauthorized salvors.
11. A representative of the SHPO and/or land managing agency should be permitted to observe any recovery activities undertaken by individuals or non-governmental institutions. In the event that the SHPO or agency does not have personnel available, the holder of the recovery permit should be required to make arrangements for an outside observer acceptable to the SHPO or agency. Observers should have specialized expertise in aviation archeology.
12. Recovery operations should be comprehensive in nature. Recovery of select components or partial documentation should not be permitted except in special circumstances.
13. The three permanent members of the committee described in item 3 (above) should be charged with developing a set of minimum required standards for aircraft recovery operations carried out under permit. Such standards should include requirements for:
 - a. site documentation (photography and mapping).
 - b. provisions for dealing with human remains.
 - c. recovery and proper disposition of component parts of interest to parties other than the permit holder.
 - d. dealing with unexploded ordnance which may be present.
 - e. dealing with non-ordnance related safety concerns such as pressurized oxygen and hydraulic systems.

APPENDIX D

PRESERVATION MANAGEMENT PLANNING RECOMMENDATIONS
FOR WORLD WAR II - VINTAGE VEHICLES AND WATERCRAFT
IN ALASKA

D.1 Introduction

Preliminary management and mitigation plans for vehicles and watercraft of World War II vintage and/or use in Alaska are presented as a special section of this report. No consensus currently exists concerning such remains, and, unlike aircraft, which have a vocal constituency, vehicles and watercraft are often ignored or viewed as an unsightly disposal problem. While leaking gasoline, diesel, fuel oil, lubricants or battery electrolyte may constitute an environmental hazard as may rare instances of live ammunition, these are felt to be minor considerations with the objects under consideration.

D.2 The Development of Surface Transportation in Alaska with Special Reference to the World War II Period

Alaska was a "trackless wilderness" at the time it was taken over by the US in 1867. With over 26,000 mi. of coastline (more than the total of the Atlantic and Pacific coasts of the Continental contiguous US), Alaska has always depended heavily on water transport. The initial Euro-American settlement depended on a series of coastal sites linked by ship traffic. It was not until the discovery of gold in the Klondike that significant interest developed in settling the interior. This led to investigations of riverboat use on the Yukon, Tanana, Copper and Kuskokwim Rivers and of rail construction (the first railroad was the narrow gauge Yukon and White Pass between Skagway and Whitehorse, built in 1898). A US Congressional committee visiting Alaska in 1903 reported that there was "not to be found a single wagon road over which vehicles can be drawn, winter or summer" (ASCE, 1976:79). In 1905, the Alaska Road Commission (ARC) was created to survey and construct surface routes, with the first priority being the construction of a road between the port of Valdez and the Yukon Valley. The resulting Richardson Trail (named after the first ARC commissioner, Major Wilds P. Richardson) was opened for wagon travel, with the first automobile making the trip from Valdez to Fairbanks in 1913. By 1917, the ARC had constructed 930 mi. of wagon roads, 549 mi. of sled trails and 2291 mi. of foot trails. Communication with the interior was largely served by the Richardson Highway and the Alaska Railroad (Seward to Fairbanks, completed in 1923). The difficulty, distance, expense of construction and maintenance and lack of a sufficient population density to make construction worthwhile kept road travel from developing, despite efforts by the ARC.

In 1940, there was 10,171 mi. of roads and trails in Alaska, however only 2212 mi. were suitable for vehicular use, and of those only 370 mi. represented a major long haul route (the Richardson Highway) (Draft History 1944). There was no overland route from the US, no roads north of the Brooks Range, and none in the western interior, although the development of tracked vehicles made travel possible during winter when the rivers and ground were frozen. There were, however, eight commercial steamship lines operating 38 vessels and providing passenger and freight service (90 percent of Alaska's needs had to be supplied from outside), primarily from Seattle.

The military largely took over transport in Alaska in 1941, and after the outbreak of the war, assumed control over all external and most internal traffic. The Army operated the railroads, the airlines and steamship companies. During the war, the military built 1145.9 mi. of road (exclusive of the ALCAN or Military Highway - 1530 mi. - from Dawson Creek to Fairbanks). The Richardson Highway was improved, but the Valdez port was

limited and the road was closed by snow in the passes during winter. To offset this problem, the Glenn Highway (147.5 mi. between Palmer and Gulkana, the latter north of the problem passes above Valdez) was built in 1941-1942. The ALCAN was built in 1942-1943. The remainder of construction primarily involved access roads at the various bases constructed around Alaska, rather than point to point routes.

The logistics of supplying Alaska hinged primarily on sea routes. During the period July 1 - October 15, 1943, when the military buildup reached its zenith with roughly 150,000 personnel assigned to Alaska (plus c. 70,000 civilians), the Richardson Highway (with freight originating at either Valdez or Anchorage, i.e., at seaports) handled 11,812 tons of freight, while the Alaska Railroad handled 161,683 tons (again derived from ports). The newly opened ALCAN Highway handled 6326 tons (some of which may have derived from materials brought in over the White Pass and Yukon Railroad via the port of Skagway), while the Air Transport Command moved a total of 1373 tons of freight. Personnel and aircraft are not counted, nor is supply (all by sea) for the forward Aleutian bases. Of a total of 181,194 tons brought into interior Alaska by all routes, only 0.75 percent moved by air and only 3.5 percent moved by way of the ALCAN. Over 95 percent moved by sea (based on data from Appendices, Draft History 1944). Still, an estimated 5000-10,000 vehicles were in use in Alaska, the majority being imported by the military between 1940 and 1945, since prewar vehicles were scarce (Draft History 1944).

The main war was in the Aleutians, where there were virtually no roads and where in many cases none could be built. The steep, rugged terrain prevented or severely limited vehicle use in some areas, while muskeg caused even tracked vehicles to sink (legend has it a Sherman tank was lost in the tundra at Cold Bay (ACOE 1977)) and rendered wheeled vehicles largely useless. Still, 483 mi. of roads were built at bases in the Aleutians, with hundreds of vehicles being imported to service the bases. Traditional armor was tested at Cold Bay and Fort Glenn, but was found wanting. The few Japanese prisoners taken on Attu accused the US forces of employing tanks in the battle, but what they apparently saw were unarmed Caterpillar tractors used to haul supplies. Amphibious military vehicles, such as the Alligator, the DUKW ("Duck") and the AMTRAC, were developed too late and were in too short a supply to be used in force in Alaska, though photographs attest to their presence in the theater. Likewise, the Weasel was tested in Alaska near the end of the war, but was not used operationally. The bulk of vehicles consisted of jeeps, trucks and construction equipment, much of which consisted of available prewar equipment. The workhorses in Alaska proved to be the Caterpillar D8, D7, D6, and D4 tractors, with Athey "crawler" tracked trailers.

The Japanese also suffered from a lack of vehicles. The only wheeled vehicles noted on Attu were rickshaw-like carts, and the few tractors noted were light, inferior models used for shifting artillery. On Kiska, a total of 60 light trucks, 20 motorcycles, eight sedans, six minicars and three light tanks were inventoried (Draft History 1944:200f). The Japanese on Kiska had put some effort into engineering roads, preparing and filling the central roadbed and running lined parallel drainage ditches along the track. The lack of Japanese success in constructing airfields on Attu and Kiska is attributed to the lack of heavy construction equipment. Dumpcars and tramways on tracks were installed on both islands to move spoil and fill, but inefficient hand labor was relied on due to a lack of suitable equipment.

The watercraft situation was equally tenuous. Both Allied and Japanese forces were dependent on ship supply, and both had access to only limited watercraft due to higher priority assignment of available shipping to other areas. The initial Alaskan Navy consisted of a gunboat and a few YP (converted fishing) boats. Even during the invasion of Attu and Kiska when large naval task forces were assembled, the armadas had a patchwork quality with such incongruous vessels as could be begged, borrowed or stolen being impressed into duty. The War Shipping Administration chartered vessels for military and general supply for both the Army and the Navy, most of which were returned to commercial operation after 1946. The Alaska Barge Line, consisting of tugs, lighters and motorized barges for tactical (local) supply was also formed under military auspices. A total of 190 private watercraft were in use under ADC authority in February, 1943, including two shallow draft tugs, 53 ocean-going tugs, 18 power barges, two schooners, 101 scows and four sternwheeler river steamboats (on the Yukon-Tanana and Kuskokwim routes) (Draft History 1944:374). Helbock and Dimpsey (1978) list over 500 Allied ships known to have served in Alaskan waters and campaigns from 1939-1946, with 42 being reported as sunk.

Of these 42, only five were lost as a result of direct enemy action though some were lost in legitimate combat operations. The SS Northwestern, was beached at Dutch Harbor, serving as a construction crew barracks and generator station, when it was bombed and burned by the Japanese in the raid of June 4, 1942. Local legend has it that the remains lie aground in the harbor, but records indicate that the ship was towed to the States and sold for scrap. The freighter SS Arcata was torpedoed and sunk south of Kiska on June 11, 1942; its exact location is unknown and it was not salvaged. The USS Casco, a seaplane tender, was torpedoed in Nazan Bay, Acka, on August 29, 1942; the attacker, the RO-61, was sunk and the Casco salvaged. The destroyer USS Abner Read struck a mine in Kiska Harbor on August 18, 1943, during the abortive invasion, and went down with 70 aboard; the ship was later salvaged. The USS S-44, a submarine, was sunk on October 7, 1943, by a Japanese destroyer in the Sea of Okhotsk, somewhat removed from the immediate Alaskan sphere. The USS Grunion, a patrol submarine, was reported lost August 16, 1942, near Kiska, and though it cannot be confirmed, may represent an additional combat loss. The longest sustained set piece ocean battle of modern times, the Battle of the Kommandorskis, occurred on March 26, 1943, between the US blockade force and a Japanese task force attempting to resupply Attu and Kiska. No ships were sunk on either side, but the Japanese were forced to turn back, crippling subsequent naval support of their Aleutian garrisons.

The Japanese lost a total of 21 ships out of approximately 100 engaged during the Alaska campaign, all but one in the Aleutians. On July 9, 1942, the Coast Guard cutter McLane and the YP boat Foremost succeeded in trapping and sinking a Japanese submarine, identified as the RO-32, off the southeast coast of Alaska. Otherwise, two subchasers, three destroyers, six submarines and nine transports were sunk by Allied forces, nine by bombing, five by torpedo, three by depth charge, three by shelling, and one due to operational loss. Eleven were sunk in or off Kiska Harbor, four off Attu, and one each off Agattu, Atka and Shemya. At least some of those at Kiska and Attu may be potentially recoverable. Thompson (1984e) also lists four beached Japanese freighters at Kiska (the Nazima, Kano, Urajia and Borneo Marus). The cableship SS Dellwood is believed to lie in Massacre Bay at Attu and the destroyer Worden in Constantine Harbor at Amchitka. Japanese small craft - six minisubs

(identified as "Sydney" two-man electrics) on Kiska and landing craft remains on Attu and Kiska - have also been reported. US landing craft (LST, LCI, LCT, LCP, LCV and LCVs) and other small craft (J-boats, Higgins boats, Chris Craft, MV and PT boats) may also exist at various locations in Alaska.

At the end of World War II, literally hundreds of vehicles and watercraft were left in Alaska. Many were commercial property which had been commandeered and/or leased during the war, which were returned to their owners. Many were the victims of hard usage, and were beyond use or usable only for parts. Hundreds were left at depots on Shemya, Attu, and at other locations, especially in Canada on the ALCAN and CANOL projects. Many were junked, or buried, especially in Canada, since it was not feasible to ship them out and they could not be absorbed by the local economy. The Army continued to build road projects on the mainland, such as the Taylor and Steese Highways, but many roads, especially in the Aleutians, were allowed to deteriorate. With deterioration of the infrastructure, harsh conditions and hard usage, isolation and the constant problem of parts supply, vehicles and watercraft deteriorated rapidly in Alaska.

D.3 Vehicle and Watercraft Types Used in Alaska During World War II

The development of US military vehicles was in the hands of the Quartermaster Corps until August, 1942, at which time it was switched to the Ordnance Department. Ordnance had already been responsible for the procurement of combat (in most cases armored) vehicles. Vehicles utilized by the military were in many cases commercial models, employed where special characteristics were not needed. These were the "administrative types" and included standard sedans, buses, ambulances and trucks. Where military characteristics had been identified as being necessary, special tactical vehicles were utilized. Within the tactical models, varieties included those for general purpose, special-equipment, special-purpose and combat. The most common types were those utilized for general transport with over 3 million produced between 1939 and 1945.

Within the category of general purpose vehicles are found the most common of the tactical models: the all-wheel drive trucks. Military characteristics for tactical vehicles included specifications designed to insure reliability under difficult conditions. All wheel drive was the most important need, requiring all wheels of the vehicle to be connected to driving axles. In most cases this resulted in the addition of a live driving axle to the front wheels. This development predated World War II, but was applied to all weight categories of vehicles, in great quantity, for the first time during the war. In some vehicles this development and the experience gained during wartime production and use led to the modern application of this feature in the commercial automotive industry. Designations for the all wheel drive feature are expressed by number of wheel positions times the number of driving wheel positions. Thus, a standard sedan would be 4 X 2, while a large dual rear axled truck would be referred to as 6 X 6.

A military pattern body was designed to provide maximum ground clearance, brush protection and tire articulation. This resulted in the recognizable military look to vehicles from the period. The style established in World War II has continued to influence current vehicle design.

Efforts were made toward the standardization of vehicle lighting, ignition, instrumentation and tire sizing, resulting in easier parts supply and repair operations. While this was not always successful early in the war, a good degree of standardization was eventually achieved.

Factors of performance were also tied to standardized military characteristics. Thus gradability, tractive power and load carrying capacity were specified for these models. Stated levels of performance were in excess of those normally associated with commercial vehicles.

Special-purpose vehicles of the non-combat type included both half and full tracked models. These were designed to achieve greater mobility and tractive power under poor ground conditions. Many improvements in tracked vehicle design were the result of wartime needs and the impact of these ideas altered the subsequent civilian versions. The first successful amphibious designs came from wartime development and were the basis of subsequent development.

Combat vehicle design underwent its first period of intensive development in the US just prior to the entry in the war. Dramatic increases in combat vehicle size, power, armor and armament characterized the process. Early versions of these vehicles quickly became obsolete and were relegated to less active theaters.

Arctic conditions are particularly difficult for vehicle operation and maintenance. Cold weather causes thickening of lubricants, loss of battery efficiency, embrittling of materials and increases the time required for repairs. Techniques were developed to overcome these problems that were applied to vehicles used in the Alaska theater. Cold weather starting aids were most important, consisting of engine heaters for use during standby periods. These were either kerosene or gasoline fired, and would maintain the engine at operating temperature during shutdown. Engine oil and batteries were often warmed by vehicle mounted preheaters. Personnel were protected by cab enclosure kits and warmed by hot air heaters, the latter being quite unusual for military vehicles at that time.

Movement over the ground in the arctic area was exceptionally difficult during the period of thaws. Traction devices were developed for attachment to wheels to improve flotation in deep mud conditions. Oversize tires were also employed to achieve the same end. Winter conditions were equally difficult given the usual poor performance of wheeled vehicles in snow and ice. Chains were necessary accessories but real mobility in snow was achieved through the use of purposely developed full-tracked and half-tracked vehicles. These represented major breakthroughs in high mobility vehicle design. The later generations of such wartime vehicles, in use in Alaska, were successfully used in the Antarctic and Arctic during the postwar period.

The great majority of vehicles employed in all theaters of the war were of the general purpose/cargo variety. The situation in Alaska was no different despite the peculiarities of operating conditions, and the demand was greatest for this vehicle type. Prior to the war, relatively small quantities of these vehicles (4X4 and 6X6) were produced. With combat conditions more likely to be encountered in other theaters of the war, it was determined to utilize as many substitute and non-standardized vehicles in Alaska as was possible. These consisted of commercial administrative types as well as early tactical

versions exhibiting military characteristics. The latter were known as the "civilian pattern models" and represented interim designs while military models were still undergoing development. This situation produced maintenance and parts supply problems as a great variety of non-standard vehicles were put to use.

The Alaska theater also provided the field for the development of many truly innovative designs. The ability of small tracked vehicles to negotiate deep snow and mud was established in this theater, and many of the early versions of these unique machines were employed and then abandoned in Alaska.

The role of the US in supplying equipment to other Allied nations as part of the lend-lease program determined the allocations of certain vehicle types. Some varieties had their entire production runs sent overseas, while in other cases Alaska was made the sole North American exception. Thus in some cases certain vehicle models found in Alaska may not have survived elsewhere. The special arctic features and equipment noted above are also likely to have survived on vehicles in the Alaska area. They could represent the only surviving examples of this early effort to equip vehicles for these conditions.

In addition, record keeping for individual vehicles did not parallel the detailed accounts maintained for aircraft. Abandonment by the military did not necessarily signal the end of the active use of a vehicle. The practice of cannibalization of one or more vehicles to allow the continued functioning of others allowed civilian use of the vehicles for many years. For many years following the end of World War II, these vehicles were used as parts sources. This activity resulted in the local assembly of highly modified, unique vehicles. This process did not impact all the vehicles at all locations in the study area, nor was it an important factor for those vehicles not readily accessible.

With the exception of a few classes of construction equipment ordered in quantity by the military (Coll et al. 1958), such equipment essentially represented that which was available in Alaska or on the West Coast at the time.

Those vehicle types which have been identified are presented in Table D-1. This consists of a compilation of references to and identified illustrations of specific types. In most cases, there is a lack of complete references to and documentation for types and information concerning assignment, quantities etc. is universally lacking.

The situation with watercraft is even more confused. Attrition is, if anything, greater than for vehicles, and even with standardized types, there are more individual idiosyncrasies and variations in ship and boat construction. There are also absolutely fewer potential candidates in this resource category, and the range of remains extends to a much greater magnitude in terms of size where large shipping is concerned. Identified types are presented in Table D-2. The compilation resulted from a process similar to that noted above for vehicles.

Table D-1. Vehicles Associated with the World War II in Alaska Historic Context

Allied

Wheeled-general purpose/transport:

- Jeep (1/4 ton truck)
- Ford sedan
- 1/2 ton truck (Dodge) light truck/ambulance/weapons carrier configurations
- 3/4 ton truck (Dodge) light truck/ambulance/weapons carrier configurations
- 1 1/2 ton truck (Chevrolet/Ford/Dodge/GMC/International) platform/stake/
panel/dump configurations
- 1 3/4 ton truck (Chevrolet)
- 2 1/2 ton truck (GMC/Studebaker) platform/stake/dump (6X6X4 ft) gasoline/water
tank configurations

Wheeled-special purpose/construction:

- Crash/fire trucks (Bean)
- 1, 5 ton lift trucks
- Ford-Sullivan compressor truck
- Grader (Galion)
- 7 ton truck
- 11 ton truck (Mack) all-wheel drive
- 9, 10, 15, 20 yard dumptruck (Euclid) double-dual rear wheel
- Diamond T 4 ton heavy truck
- Autocar 4, 5 ton heavy truck
- 10 ton road roller

Tracked (self-propelled):

- Caterpillar tractor D4/International tractor TD9
- Caterpillar tractor D6/International tractor TD14
- Caterpillar tractor D8/International tractor TD18
- [tractor, straight/angled dozer blade, grader blade configurations]
- HD-10 gasoline tractor
- Snogo LTR (light)
- Snogo TU3
- Allis-Chalmer tractor model M7
- Cletrack
- T-15 (M28) light cargo carrier (Weasel)
- T-24 (M-29) cargo carrier (Weasel)
- 2-man light tank (unidentified)
- Le Tourneau rooter
- Le Tourneau 8, 12 yard carryall
- Foote paver
- 3, 10 ton tractor cranes
- Parsons 31 ditcher
- backfiller
- Sauerman scraper
- Hyster tractor hoisting unit
- Caterpillar elevating grader with conveyor unit
- Bay City power shovel (shovel/clamshell/dragline, boom/piledriver configuration)
- 2 yard Northwest steamshovel
- 54-B Steamshovel

Table D-1. Vehicles Associated with the World War II (Cont'd)

Trailer/sleds:

Athey crawler (six cubic yard)
Killifer cable plow (wide-track modification)
C-48 cable plow
Tractor WL cable reel trailer
Trailer skid-mounted fire pump
Wanigan skid-mounted shelter unit
Bobsled (welded steel yoke)
Cradle sled (single skid/platform)
Tundra sled (3 1/2 x 6 ft)
Reinforced sled (4 x 8 ft)

Japanese

Wheeled-general purpose transport:

Nissan light truck
motorcycle (unidentified)
Minicar (unidentified)
Sedan (unidentified)
Truck (unidentified)

Wheeled - special purpose/construction:

2 Wheel rickshaw barrows
Tram

Tracked (self-propelled):

Caterpillar-type tractor
Ford-license/Graham-Paige right-hand drive grader/dozer tractor configurations
Light tank (unidentified)

Table D-2. Watercraft Associated with the World War II Alaska Historic Context (below DD - destroyer - class)

Chris Craft surf boat/lighter
 Higgins surf boat/lighter
 Rubber landing boats
 MV boat
 MT (motorized transport) boat
 PT (patrol/torpedo) boat
 J-boat
 YP-boat
 BSP series motor barge
 Sea tugs
 Shallow draft tugs
 Power barges
 Schooners
 Scows
 USAT (US Army transport)/attack transport (armed)
 LCI (landing craft-infantry)
 LCT (landing craft-tank 108 x 36 ft)
 LST (landing ship-tank 300 ft)
 LCVP (landing craft-vehicle/personnel)
 LCP (landing craft-personnel) 3/4 ton vehicle/36 personnel
 (total 2 1/2 ton capacity)
 LCV (land craft-vehicle)
 LVT (landing vehicle-tracked) "Alligator"
 AMTRAC - amphibious tractor/personnel carrier (also AMPHTRAC)
 DUKW ("Duck") 2 1/2 ton
 2000 ton crane barge
 Japanese mini-sub (identified as code-name "Sydney")
 Japanese I-class submarine
 US S-class submarine
 US PC (patrol craft) 173 ft. submarine chaser
 Japanese landing craft

D.4 Evaluating the Significance of Vehicles and Watercraft in Alaska

As with other properties and property types discussed in section 4.0 of this report the criteria for the evaluation of significance (and eligibility for the National Register of Historic Places) as set forth in 36 CFR 60 apply:

The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons significant in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.

Examples of vehicles and watercraft which would qualify as significant under category A are few, unless the Japanese examples captured as a consequence of the retaking of Attu and/or Kiska, specific, historically significant event, are considered. Under category B, no specific examples known to have been associated with significant individuals are known or are likely to be documented, and with respect to category D, these types of resources are unlikely to yield significant information. Any determination of significance would have to come under category C.

Significance can be further associated with the themes of the historic context: a collateral role in the Allied Military Operations and Japanese Occupation themes, a direct agency role in the Transportation/Logistics theme, and potential uniqueness under the Cold Weather Adaptation/Engineering theme. Relatively few vehicles or watercraft were actually involved in combat, with traditional armor being unsuited to use in Alaska and the Aleutians, and naval action, with the exception of the Battle of the Kommandorskis, being extremely limited in nature.

Quantities of vehicles originally assigned to the Alaskan theater and information on the numbers remaining today, as mentioned earlier, are difficult to estimate. Modifications to the remaining vehicles and the cannibalization of non-repairable machines would have diminished the inventory in all the classes involved. It is difficult to consider most of the modified vehicles as possessing sufficient integrity in any consideration of their significance. As with historic aircraft, issues concerning significance are difficult to address for movable resources. There are specific events, such as the construction of the ALCAN, that would suggest the appropriateness of the identification of classes of vehicles to be protected due to an important

association, but sufficient interest has not been generated in the past to result in specific determination concerning the National Register eligibility of vehicles.

The majority of the vehicles under consideration are of the soft-skinned variety (not armored), and as such have not been the subject of collection, restoration or research until recently. Examples of some of the vehicles are scattered among the few military vehicle museums (Aberdeen Proving Grounds, Oregon National Guard Museum, Fort Knox Museum, Fort Eustis Museum, Smithsonian Institution, US Transportation Museum) and the now-growing ranks of private collectors. Unlike the situation with military aircraft, the great majority of vehicles are restored by private individuals. Museum collections favor, in general, the armored vehicles that had little employment in the Alaskan theater. As restoration of soft-skinned vehicles is more labor intensive than it is rigorous or expensive, it is feasible for individuals to carry out the process.

The estimation of the quantities of specific types of vehicles that have survived in sufficiently intact and unmodified condition is difficult. One can at best reference the figures compiled by hobbyists for the vehicles that have attracted their attention. Estimates for the quantities associated with the various types of vehicles have been derived in this fashion.

Further, except in isolated areas, specifically the Aleutians, integrity and association cannot be presumed, though the potential exists for discovery of important vehicles (and/or watercraft) at many locations in Alaska.

A selective discussion of vehicles and watercraft types likely to be found in Alaska and their relative significance as well as other considerations follows.

Wheeled Vehicles - General Purpose/Cargo

Ford Sedan - This was the most common of the standard civilian sedans utilized by the military. In most cases these vehicles were simply equipped with blackout lighting and olive drab paint. Vehicles of this configuration have survived with hundreds being preserved. An unusual variant of the Ford sedan that might have had application in the Alaska area was the Marmon Herrington four wheel drive conversion. This was developed to provide increased mobility and traction under poor road conditions. Examples of this model are rare (less than a dozen exist), and efforts should be made to preserve any surviving examples.

Truck 1/4 Ton (Jeep) - This is the vehicle that is most associated by the general public with World War II. It was utilized in all theaters of the war. Over 1,000 examples of the standardized models from Willys (MB) and Ford (GPW) have been preserved. Of potential interest in the study area would be any surviving examples of the pre-standardized models manufactured by Bantam (BRC), Ford (GP) and Willys (MA). These were initially distributed to many military units for trials, and perhaps a dozen BRCs, two dozen GPs and less than one half dozen MAs survive in private hands today. The significance of the Jeep-type vehicle has been well established in both its effectiveness and its contribution to off-road vehicle design. Many of the special Arctic features were applied to the Jeep, and examples of these would be significant discoveries.

Truck 1/2 and 3/4 Ton (Dodge) - The 1/2 ton was the most common of the light truck class to be used in the Alaska area. Cargo, command, ambulance and field sedan models of this military designed vehicle were utilized. This and the 3/4 ton model Dodge that followed in development were known as weapons carriers. Hundreds of examples of the approximately 400,000 vehicles manufactured are preserved, and concern for preservation should be shifted to the predecessors of these models. These were known as the VC series, of which limited quantities were produced and less than a dozen of most varieties are known to survive. Some were utilized in the Alaska area, and discoveries should be evaluated in terms of preservation options.

Truck 1 1/2 Ton (4X2 and 4X4) - Vehicles in this weight class were produced by Chevrolet, Ford, GMC, Dodge and International. The most common models to be employed in the Alaska area were the Chevrolet version in the 4X4 configuration. Cargo, panel and dump variants were utilized. As with the Ford staff cars, many Ford model 1 1/2 ton trucks were converted to all wheel drive by Marmon Herrington. These vehicles were in common use during the ALCAN Highway construction. In this weight class of vehicles, the ones converted by Marmon Herrington would be of interest and worthy of preservation. Surviving examples are quite modified and less than a dozen in some original condition have survived.

Truck 2 1/2 Ton (6X6) - Vehicles in this class were manufactured by GMC and Studebaker. Both were in common use in the Alaska area. Of these models, the Studebaker is now quite uncommon, with less than a dozen in approximately original configuration. Most of them were distributed through Lend-Lease to areas outside of US control. This configuration of the all wheel drive truck (6X6) was produced in the greatest quantities during the war (over 800,000), and provided the bulk of the cargo hauling in most theaters. Convoys on the ALCAN Highway were made up in large part of the Studebaker model (US 6), and it would be appropriate to consider preservation options should any be encountered.

Trucks-Heavy - In this class there was some utilization of the Diamond T 4 ton, the Autocar 4-5 ton, with occasional use being made of other large vehicles. The poor quality of the road system made use of very large wheeled vehicles a risky business during most of the year. No special significance is attached to these models in terms of their contribution to construction and transport in the area.

Construction Equipment - Wheeled and Tracked

In most cases standard civilian machinery was employed with little or no modification for military use. This was characteristic of the entire wartime period. Very little research has been carried out on this type of equipment in terms of its significance to the heavy construction industry. Importance of construction equipment in the Alaska area is more likely to derive from its association with significant events in the history of the specific construction activity in Alaska. This would include the ALCAN Highway as well as many of the facilities identified elsewhere in this study. This approach to significance contrasts with that related to the wheeled and tracked military vehicles where importance can potentially be associated more directly with some of the vehicles themselves.

Tracked Vehicles

Alaska was the initial proving grounds for one of the most significant tracked vehicles to emerge from World War II. This was the Studebaker full tracked, high flotation vehicle commonly identified as the Weasel. Originally it was produced (approximately 16,000 total) for an intended over-snow operation in Europe at Churchill's request. Instead, it was first employed in considerable numbers in the Kiska operation. Two models were produced, the T15 (M28) and the T24 (M29). The mobility of this vehicle in snow and mud conditions had not been achieved prior to this. The design of the Weasel became the basis for all over-snow vehicles used in subsequent arctic and antarctic explorations. The early models (T15) have all but disappeared (less than a dozen are known to survive) and their significance suggests that efforts should be made to insure the preservation of any examples that are identified.

The tractor M7, manufactured by the Allis-Chalmers Company, utilized a unique half-track arrangement with the front wheels replaceable with skis for deep snow use. It had the standard Jeep engine power plant and was conceived of as an arctic rescue vehicle, able to negotiate otherwise inaccessible terrain. Less than a dozen of these vehicles have survived, with only a couple in running condition.

Armored Vehicles

Relatively few armored vehicles were employed in the Alaska theater in part due to the lack of anticipated need as well as to the poor mobility over the unsuitable terrain. There were, however, a few early model light tanks based in the area. At this time it would be necessary to consider any examples of these vehicles as important. Most early model tanks and armored cars have been lost and many variants have no known extant examples.

Trailers/Sleds

Standard wheeled trailers proved to be unsuited for deep mud and snow conditions as the associated prime movers would often have to pull them so hard as to strip the axles off in tough going. As a result, a series of sleds of various capacities were developed to skid over the mud and snow surfaces. Examples of these are quite rare (none in collections) as their heavy use led to rapid deterioration. Efforts should be made to identify this type of equipment and effect its preservation. Tracked trailers, such as the Athey crawler, were also used extensively.

Japanese Equipment

Very little remains of this equipment in the US. Most museum collections lack any wheeled vehicle models, with armored equipment limited to a few examples. It would be likely that any of this equipment would be considered to be significant in terms of its design and development. Special significance can also be attached to this equipment as it is associated with the Japanese occupation of the Aleutian area.

Watercraft

The utilization of watercraft in the Alaska theater followed patterns of use for other coastal areas. Many of these craft were of wooden hull design.

Most of these small boats - Chris Craft, MV, PT, and Higgins - were subject to rapid deterioration if not maintained constantly. Examples of these could be considered significant should they be encountered.

Many of the specialized steel hull amphibious models (particularly the LVT) were subject to accelerated deterioration due to rusting. Early versions of these craft are quite rare (less than a dozen examples), and efforts should be made to preserve any identified examples.

The other varieties of watercraft noted were in most cases standard civilian versions employed in a variety of marine applications. Little significance can be associated with characteristics of their design and development. Specific activities, however, might lend significance to these models.

The discovery of versions of Japanese submarines utilized in the Aleutians would be quite important. These boats represent a unique class of craft, examples of which are quite rare. Efforts to preserve any models identified should be made.

D.5 Management of Vehicles and Watercraft

D.5.1 Management Considerations

Unlike aircraft, vehicles and watercraft of the World War II era have provoked relatively little controversy among competing constituencies. As noted above, treatment has been of a mundane and pragmatic variety: use it or junk it. Museums and private collectors have tended to focus on armored vehicles, but greater interest has been evidenced in standard examples over the last 10 years or so, often focusing on the restoration of vehicles by individual collectors who have graduated from backyard tinkering with jalopies to halftracks and deuce-and-a-halves. A market valuation for such artifacts is beginning to emerge, so that the attractive nuisance aspect of protecting the resource and its setting has become an additional concern.

Another consideration which parallels that of downed aircraft is that preservation in place is often tantamount to writing off the resource. Vehicles and watercraft are relatively fragile items. Non-armored, "soft-skinned" vehicles deteriorate due to rusting and mechanical freeze-and-thaw action. Wooden-hulled vessels have an extremely short life-span if not actively preserved, and steel-hulls are subject to the same action as vehicles, with the added element of marine organic assault. Unlike downed aircraft, where a reasonable presumption of significance can often be made, vehicle and watercraft remains must be more carefully scrutinized to assess their importance with the benefit of less information to go on. No data base comparable to that available for downed aircraft can be compiled at this time. Where specific indications of the existence of vehicles and/or watercraft at specific locations were noted, these are flagged in the site discussions in chapter 5.0.

D.5.2 Recommendations for the Management of World War II Vintage Vehicles and Watercraft in Alaska

1. Any vehicles which are encountered in the course of examination of contexts related to World War II in Alaska should be recorded and

evaluated for significance in accordance with the discussion presented above. Since most field investigators will be inadequately prepared to make such evaluations, the following data should be recorded to enable qualified specialists in military vehicles to make a determination of significance: a) photographic record, b) measurements and description to such extent as can be taken without disturbing the remains unduly, c) transcribing information from the vehicle nameplate (model number, serial number, specifications etc.), and d) transcribing any such markings as might be used to trace the vehicle (plates, insignia, etc.). This information should be forwarded to a specialist in military vehicles for review and an assessment of significance. Prior to such a determination, the remains should be left in situ. Aside from the recording designed to acquire information to assist in a determination of significance, the investigator should record the presence of the remains to the level of detail appropriate for the nature of the investigation in which they were encountered.

2. If the vehicular remains are adjudged significant as per the above procedure, every effort should be made to recover them, since preservation in place is not a viable option for such remains and recovery is generally more feasible for these remains than for remains such as downed aircraft (while aircraft are large, fragile and can drop out of the sky in inconvenient places, vehicles generally are of more manageable proportions and originally required some rational means of access to their present location). Stabilization to the degree feasible should be undertaken, as should detailed catalogue recording.
3. A public repository should be sought for the curation of recovered significant vehicles, preferably within the state of Alaska. At present, the only public in-state repository identified for such vehicular remains is the Alaska Historical and Transportation Museum.
4. Any watercraft which are encountered in the course of examination of contexts related to World War II in Alaska should be recorded and evaluated for significance in accordance with the discussion presented above. Since most field investigators will be inadequately prepared to make such evaluations, the following data should be recorded to enable qualified specialists in watercraft to make a determination of significance: a) photographic record, b) measurement and description to such extent as can be taken without disturbing the remains unduly, and c) transcribing such markings as might be used to identify and trace the vessel (model number, serial number, registry, insignia, etc.). This information should be forwarded to a specialist in watercraft for review and assessment of significance. Prior to such a determination, the remains should be preserved in situ to the extent possible. Aside from the recording designed to acquire information to assist in a determination of significance, the investigator should record the presence of the remains to the level of detail appropriate for the nature of the investigation in which they were encountered.
5. If the vessel remains are adjudged significant as per the above procedure, and the remains are of manageable proportions (i.e., are transportable by ordinary means), and are located on land or in a shallow water context such that they would be recoverable by ordinary means,

every effort should be made to recover them, since preservation in place is not a viable option for such remains. Stabilization to the degree feasible should be undertaken, as should detailed catalogue recording.

7. If vessel remains are of large proportions (i.e., would require special equipment and expertise to transport), and/or are located in deep water such that they cannot be recovered without a major engineering effort, they should be marked and left as is until such time as resources requisite to effect full recovery and subsequent stabilization treatment are available. The assumption is that mechanical damage (i.e., turbulence, drift) has already been inflicted on the remains, with future damage from such sources likely to be incremental and relatively minor; that Arctic water temperatures are actually an aid to preservation; and that premature recovery could result in damage to the remains during recovery and transport operations and subsequent deterioration due to salinity, rapid desiccation and an inadequate level of attention, so that preservation concerns are better served by leaving the remains in place.
8. Disbursal of vehicular and watercraft remains not adjudged significant shall be at discretion of the manager(s) involved, subsequent to the determination procedure and appropriate recording. Recovery is, of course, subject to the permit requirements of the agency involved.